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MAKING THE PRINT

Printing Techniques For the Digital Photographer

A MASTERCLASS

Martin Bailey

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by Martin Bailey

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INTRODUCTION

Until the digital age, the main ways to view and share photographs were to make prints from your slides or negatives, or to display slides with a projector. For some, including me, it was a simple case of sending in your rolls of film to a lab, and having the lab do the work, with little to no artistic intervention on your part, or theirs. Sure, there were pro labs, where you could have a say, but still, it was very much out of your hands unless you developed and printed yourself in a darkroom.

Early inkjet printers took a lot of coaxing to create quality work, and even as printers improved in the last five years or so (to 2011) printing is still kind of a black art to most. An often less-than-positive experience when printing, the ease of viewing on a computer display, and the fact that photos look so damned good when backlit caused people to print less and less.

I have been printing with inkjet printers for more than 15 years now, and I've watched each generation of printers produce successively better results with less effort. However, through my interactions with other photographers, I'm fully aware that printing remains a source of frustration for many, and that's what we will work on in this eBook.

It's my intention to help photographers that either don't yet print—or do but struggle with it to a degree—to not only achieve amazing results when printing, but also to get satisfaction from the process of putting pigment (or dye) on paper.

We aren't going to dig deep into all of the technical details of why everything is how it is, because honestly, I don't believe we need to know all the details to be able to make great prints. With the quality of the printers and the papers and other substrates available today, we really don't need to know every technical detail to produce amazing prints. This book will give you a good fundamental understanding of some of the key things to bear in mind as you print, to enable you to consistently make quality prints that look like what you see on your computer display.

Hopefully this book will also take away any frustration with printing that you might have felt in the past. When printing is easy and results are consistent, all you need to do is enjoy the process, and the results, and this should contribute to making your photographic life more fulfilling.

– Martin Bailey

PART ONE: GETTING STARTED

BUYING A PRINTER

If you don't yet own a printer, then of course you need to consider buying one if you want to make your own prints. Don't do it right now! Read the rest of this book first, as we discuss a number of options. You might even decide that home printing is not for you, and I wouldn't like to have cost you money for nothing.

I'm not going to recommend a particular manufacturer. I've used Epson in the past, though I now use Canon printers. Both have been great. Hewlett Packard also has a strong line-up, though I have no personal experience with their printers.

BUYING A PRINTER

When you are ready to buy, consider the following...

How Large?

• A4 or US letter size printers are a good place to start for personal printing. Now very cheap, and excellent quality, though not really giving you big enough prints to sell in most cases.

• If you want to sell your work, you'll need to consider at least a 13"x19" (Super B or A3+) printer or larger. Again, there are a number of excellent quality printers available now, though with a slightly higher price tag than an A4 or US letter sized printer.

• Large-format printers (17" wide or larger) are becoming more and more affordable to the enthusiast now and are certainly an option as long as you have the space to house them. However, they are more complicated to print with, and not something that you'll want to jump straight into. We cover large-format printers more in the "Step It Up!" section.

What to look out for?

• Number of colours – In general, the number of colours a printer uses is directly related to how well it will reproduce colours. In an A4 printer, look for six colours or more. For a Super B or A3+ printer, look for models with at least eight colours.

• Ink is expensive – Ensure that your new printer has individual colour ink cartridges. Avoid printers with multiple colours in just one or two cartridges. These make you throw out cartridges with ink left in them when just one colour runs out first, as will invariably happen.

• Ensure the printer has a way to load thick paper, usually by feeding it in through the front or back rather than the top paper holder. This is especially important if you want to print on heavy fine art paper (covered later).

• How will you connect to the printer? USB or network? USB printers require you to plug the printer directly into your computer. A network printer gives you more freedom to print from multiple computers or from various locations around the house or studio.

Buy New

Don't buy second hand, unless it's a nearly new printer or you have a very specific requirement. The technology is changing fast, and you'd do better with a new $100 printer than paying $100 for a used printer that was great five years ago. On most consumer printers, there's no easy way to tell how many pages have been printed. If you find you have to replace the print head or heads, it would cost you more than the purchase price of a new printer.

SELECTING PAPER

Printer Manufacturer or Third Party Paper?

To begin with, you won't go wrong buying paper from the same company that made your printer. Epson and Canon have some great paper in their line-up, and you get the added benefit that the printer software knows all about the paper you bought, which makes printing almost a no-brainer.

As you get the hang of printing however, you'll want to experiment with third-party papers from companies like Breathing Color, Hahnemühle and ILFORD, to name just a few. These require that you use a third-party profile, so you need to ensure that the manufacturer has profiles for their paper and your printer model available for download. It's more likely that they will have a profile if you buy a higher quality printer, often used for photographic fine art printing. If you cannot get a profile for your printer, you'll need the ability to create your own ICC printing profiles, which we cover later.

Gloss, Luster or Matte?

The main types of paper to choose from are gloss, luster, and matte. Gloss is very punchy and vibrant. Luster papers are more subdued, but still pretty punchy and sharp. Matte papers seem to provide the most frustration for printing newbies, but as we'll see later, they actually have very good colour reproduction, produce great blacks, and aren't difficult to use at all. Matte can be very artistic and give your printed images a whole different mood and feel. I have to admit that matte papers are usually my first choice, unless there's a reason to select a different finish.

Avoiding Reflections

If you intend to display your prints in a frame with glass or Plexiglas in front of it, the glass adds another layer of glossiness, which can increase reflections that hinder the viewer's enjoyment of the print. It's definitely worth considering matte papers if you frame your work. A matte paper under glass can almost look like a gloss paper, but doesn't have the same problems with reflections.

LET'S MAKE A PRINT!

Your First Print

If you already own a printer, but are not really accustomed to printing your own work, let's get started. Your printer will come with some kind of software to allow you to print your images. Some Epson and Canon printers, for example, come with an application called Easy Photo Print, and as the name implies, it's pretty easy to get started.

If you are still feeling a little bit intimidated by all of this, first check your printer's manual to see how the manufacturer suggests you print, then just run a few prints off to see what they look like. With newer printers you'll probably be really happy with what you see, though your prints will perhaps appear a little dark. This is a common problem as people start to print, and we'll fix it in a moment, kind of…

Keep in mind that this is just a first look, to give you a feel for your printed artwork. Don't get married to that software, and if you already have Lightroom or Aperture, you can skip this altogether, especially if you are already printing from these other applications. You can usually do a much better job with these third-party applications. They allow you to have more control over the output, and set artistic margins, and they also give you the ability to save your settings in presets, which saves time and enables more consistent printing. We'll get into Lightroom, Aperture and also Photoshop shortly, but for now, let's do something about those dark prints.

LET'S MAKE A PRINT!

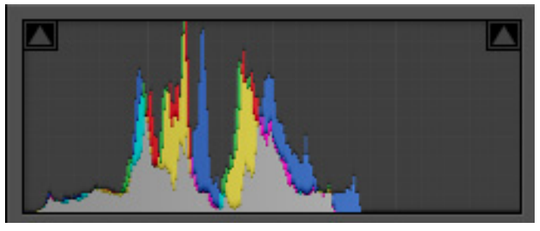
Darken Your Display

Most people get frustrated when they first start printing because the prints can look very dark. I'm now ashamed to say that until a few years ago, even I used to lighten my photographs before printing, using the brightness and then later the exposure settings in Lightroom, until my calibration tools made me realize that the images themselves were fine—it was the fact that my monitor was way too bright that was causing the discrepancy.

In the "Step It Up!" section we'll get into monitor calibration and colour management, but for now, just take my word for it, and turn the brightness of your monitor down. This will be how you use your computer from now on, and it does take some getting used to, but it's a necessary evil. I have my displays set to between 12% and 33% of their full brightness. Go ahead and turn your display right down to about 25% of its full brightness, and then compare what you see on your screen to the prints you just made.

Remember that your monitor is backlit, and your print is reflecting available light, so you will need to look at your prints in relatively good light, rather than a dim corner of your den. Daytime window light or normal electric room lighting should be fine. If your prints look brighter than your monitor now, you can go ahead and turn the brightness back up a little, but avoid making your monitor look much brighter than your print under good lighting conditions.

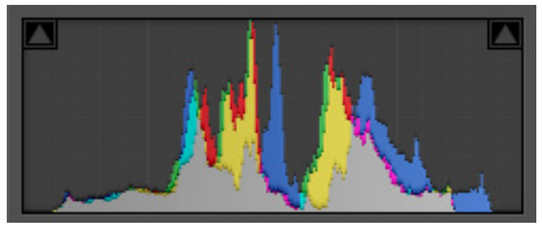
Don't turn your brightness back up when you are done printing either. It was way too bright in the first place. You are now looking at what your photographs really look like. You'll get used to it. If you don't, you may be shooting your photographs too dark. Don't think too much about how nice and punchy your images look on the screen with your brightness up high, check your histograms. If your histograms show a lot of space between the right side of the graph and the edge of the histogram box, it's likely that your images were to dark to start with. Of course, you may be working with a low-key, dark image, in which case the example histogram here might be fine:



Assuming you weren't intentionally doing something low-key, you'll need to work on your exposure techniques, which would be the subject for another eBook. For now, if your images are too dark, let's see what can be done.

Adjusting Images for Print

If you have been exposing your images too dark, and unintentionally have a lot of space to the right of your histogram, try increasing exposure using the Exposure slider in Lightroom, Photoshop, or Aperture, until your histogram looks more like this:



Once you've adjusted the exposure of your image, try another print, and compare it to what you see on your display. It should now be much closer.

LET'S MAKE A PRINT!

Shadow and Highlight Adjustment

If after you've printed your image you are happy with the overall brightness, but your shadows seem a little too dark, or highlights too bright, you can overcome that without calibrating your workflow just yet, by tweaking the image before printing. As you print more, you'll develop an eye for which images need adjusting before you print, which saves on ink and paper, and most modern printers are so good now that adjusting for print is becoming less and less necessary, as long as your base photograph is well exposed.

The best way to quickly adjust an image in Adobe Lightroom or Camera RAW in Photoshop is to use the Recovery and Fill Light sliders. Recovery will reduce the brightness of your highlights, and Fill Light brightens up the darker areas of your image. You also have a Recovery slider in Aperture, and the Highlights and Shadows sliders also work well to adjust, well, the highlight and shadow areas of your image. Just tweak these sliders a little and you may be able to overcome these problems without going crazy with soft-proofing just yet.

Fixing Color Shifts, Later...

If the brightness is now very close, but the colours seem somewhat out of whack, there are a couple of things you can do. Shortly we'll look at taking more control and printing with specific profiles, which will improve things, and then in the "Step It Up!" section we'll get into colour management, display, printer and even camera calibration, which will help a lot.

You could try adjusting your image in Photoshop, even using soft-proofing to counter the colour shift, but honestly, trying to fix colour shifts on an uncalibrated system is a fool's game. It's time-consuming and costly at best, and it's not even always possible to fully fix the colour shift. You'll be back to being a frustrated printer before we know it, and I will have failed in my attempt to convert you to a happy and content printer, so let's not even go there. Just read on…

LET'S MAKE A PRINT!

Taking Control

A modern printer will do a good job of printing your images even if you allow it to control the colour, but the colour management with most consumer printers, even high-end ones, are geared to the consumer who wants really punchy, even gaudy results. Although this may suit some of your images, most photographers want a more true-to-life reproduction of our most prized efforts. Even if we prefer more punchy colours, as I do for my colour work, we want to control that in post-processing and print it accurately, not leave it up to the printer drivers.

To take control, we want to move away from printer colour management, and to do this, let's print from Lightroom, Aperture, or Photoshop. As you work on the settings to start printing from these applications, you'll need to be aware of four major areas: media types, print sharpening, colour management and rendering intent.

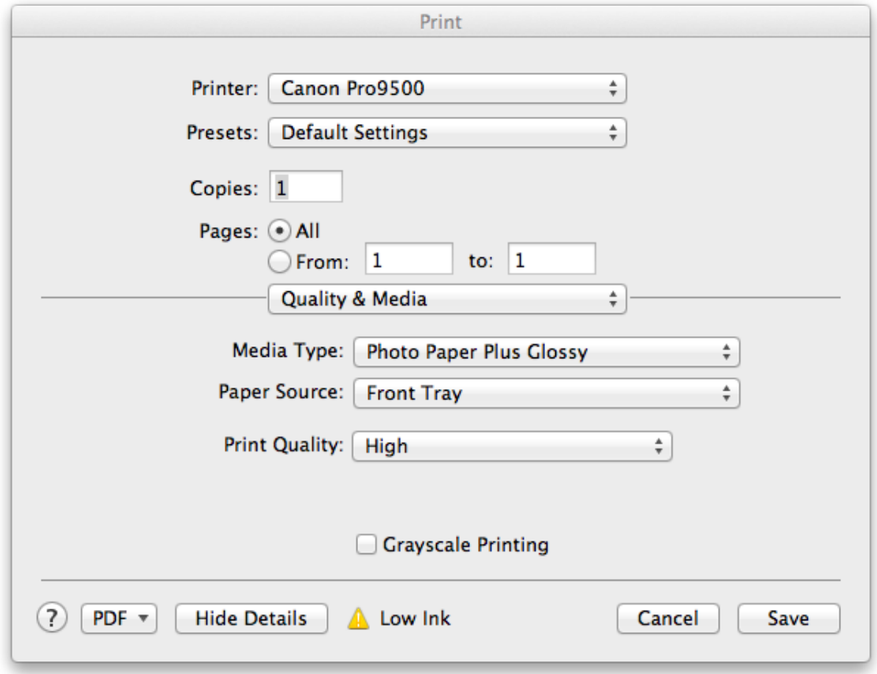
Media Types

It's important to select the correct media type before you start your print jobs. This tells the printer how to feed the paper through the printer and how much ink to apply to the surface of the paper, because some types of paper require more ink than others. Matte papers, for example, require more ink, as they absorb more than a gloss paper typically does.

Usually, you will specify the paper in the printer drivers as you prepare to print. The terminology changes from printer to printer, so it's hard to give you a single term to look for here, but generally, when you click a print or printer settings button before you print, you'll see a print dialog box like this, and there'll be somewhere to select the media type.

For one of my printers, the media type is under Quality & Media, and for another, it's under Main, but in both cases it's called Media Type, so you should be able to find this.

If you use Lightroom, don't confuse this with the media type mentioned in the Print Job section, as this is to tell Lightroom how much to sharpen your image for print as you send it to the printer.



LET'S MAKE A PRINT!

Sharpening

Lightroom – While we're on the subject, all prints have to be sharpened for print, even if they are already tack sharp when viewed on your display. In Lightroom, all you need to do is to select the type of paper you are printing to — glossy or matte. If you are printing to a luster paper, selecting Glossy will usually work just fine.

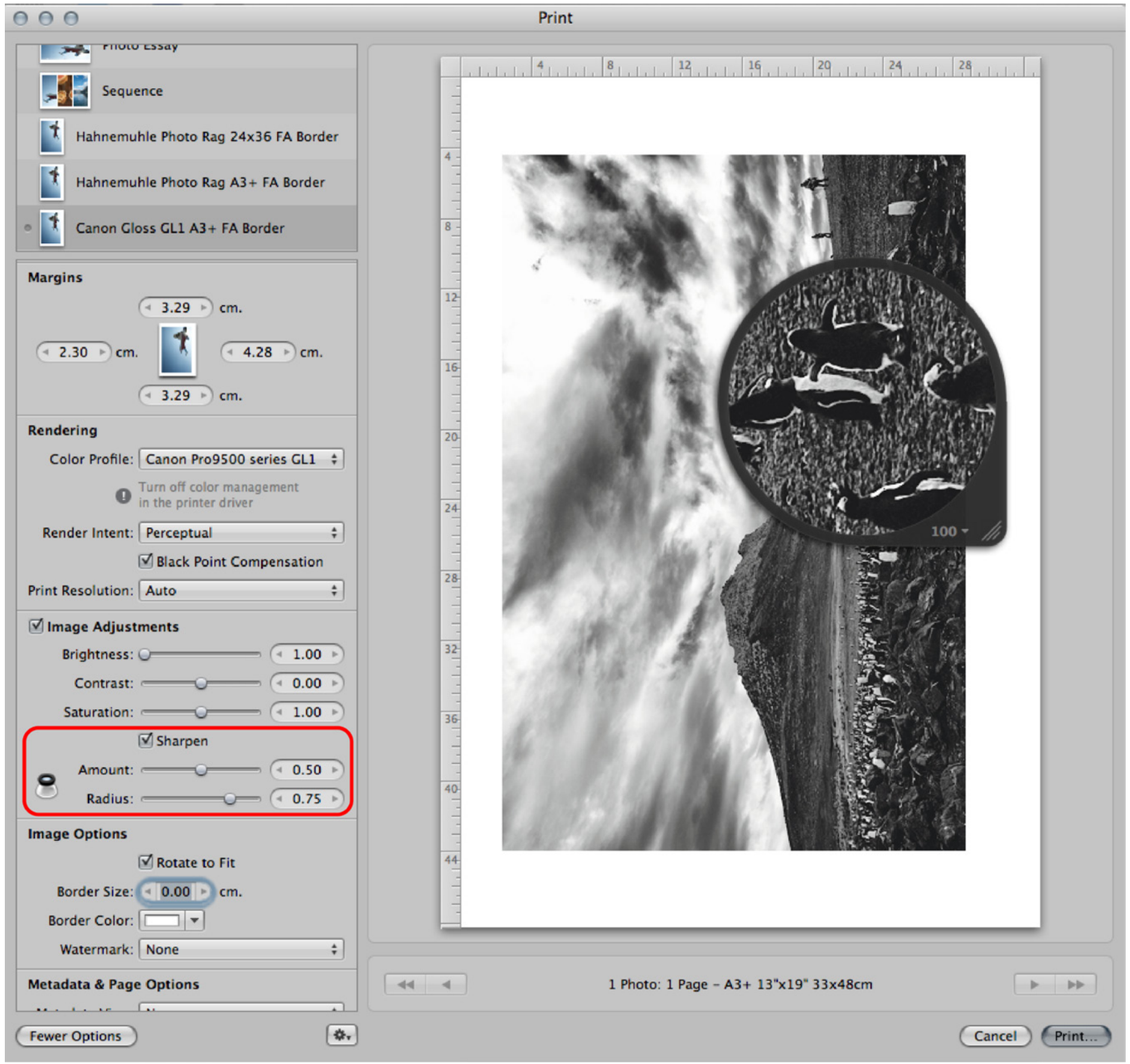
LET'S MAKE A PRINT!

Sharpening – continued

Aperture – Aperture doesn't have automatic print sharpening, so you have to do a little experimentation to find good settings for the types of paper you print to. You will save these settings in your presets, so you don't necessarily have to do this for everything you print, but you will need to find the best settings for each type of paper that you print to. If this sounds like too much work, save yourself the effort and buy Lightroom. It just works.

If you use Aperture, in the Print dialog box, you'll see an Image Adjustments panel, and if you don't, click the **More Options** button in the bottom left of the Print dialog box. Ensure the **Sharpen check box** is selected, click the loupe graphic next to the sliders, then drop your loupe over an important part of your image. It should also be an area that is supposed to be sharp.

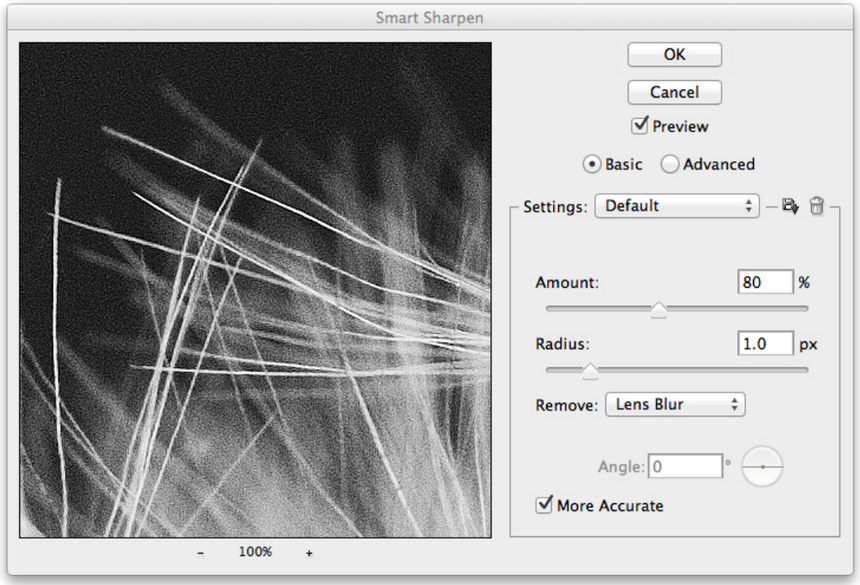
Move the Sharpen sliders until you think the image is just starting to look a little over-sharpened. This is a good starting point for your prints. Remember that Matte papers tend to need more sharpening than Gloss papers.



LET'S MAKE A PRINT!

Sharpening – continued

Photoshop – If you print from Photoshop, like Aperture, it will require a little trial and error. I'm not an expert on Photoshop print sharpening. There have been whole books written on this. But a good place to start is Smart Sharpen. When you open Smart Sharpen from the Filter, Sharpen menu, ensure the **Preview check box** is selected, so that you can see the effects on the image, then select **Lens Blur** from the Remove drop-down menu, and check **More Accurate** at the bottom of the dialog box.



You'll need to move the Amount and Radius sliders around a bit to get the image to a point that it starts to look slightly over-sharpened. An amount of 80% and a radius of 1.0 px is a good place to start, but it will depend on how sharp your base image is and what kind of paper you are printing to, as well as the size of the paper, etc. Again, if you are printing from Photoshop, you'll need to experiment here to get optimal sharpness. Note that in Photoshop there is no way to save print presets like with Lightroom or Aperture, so you'll need to keep notes of your settings.

Note that you only need to sharpen this much for print. Don't apply this sharpening and then save your original images. Ideally, you should save a copy of the image for each type of print, if you will be making gloss and matte prints, for example. One way to avoid filling your hard drive with multiple copies of the same image is to select **Convert for Smart Filters** from the Filter menu before you apply the Smart Sharpen Filter. This way the effect of the filter will be applied as a layer that you can turn on and off by clicking the eye icon next to the layer.

Personal Preference – Lightroom rules, especially when it comes to printing. I rarely print from Photoshop or Aperture. I'm just not one for spending hours tweaking stuff, especially when there's an alternative like Lightroom that handles sharpening for print for me. Also, because the sharpening is only applied when you run a print job, you don't have to save multiple copies of your images.

On the occasions that I do need to print from Photoshop, I actually still don't use Smart Sharpen. I use a Nik Software plug-in called Sharpener Pro 3.0 Output Sharpener. We won't get into this here, but it simply allows you to select the type of media you're printing to, the viewing distance, etc. and it calculates how much sharpening your image needs. I love things that just work!

LET'S MAKE A PRINT!

Printing with Profiles

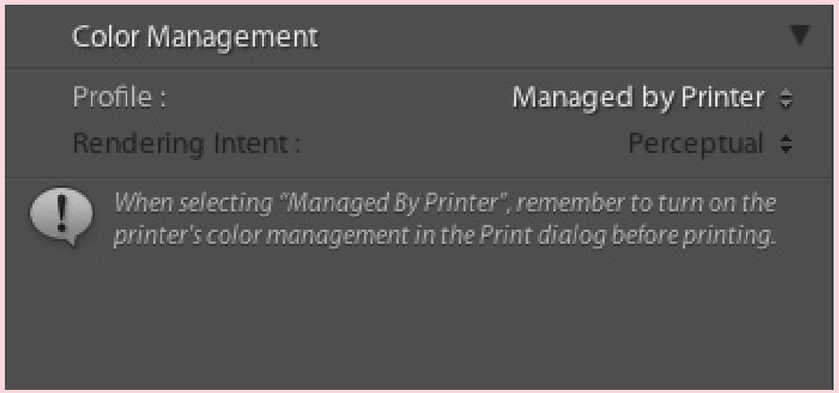
Even when printing to your printer manufacturer's brand paper, you can usually get better results by taking control away from the printer driver and handling this in the application you are printing from. First check that the printer driver installation included a printer profile for your selected paper.

To do this in Lightroom, click on the Profile drop-down menu under Color Management in the Print Module, and if you don't see a profile for your paper, click Other at the bottom of the list. Now you'll see a list of all printer profiles installed on your system. Sometimes printer profiles are mistakenly identified as display profiles, so also select the Include Display Profiles checkbox if you can't find the profile initially.

Sometimes, the profile isn't automatically installed with your printer drivers. If you don't see the profile in the list, go to your printer manufacturer's website, and look for printer profiles or ICC profiles for your specific printer, usually found on a support or download page.

If you bought a 13"x19" or large-format printer, you'll usually find that the manufacturers of most well-known third-party brands of paper have custom profiles available for download. Check on the box of the paper if you buy from a store, as there's often a link to a profile download page. If you buy your paper online, check the manufacturer's website before you buy. You'll need to match your paper and the model of printer that you own before downloading.

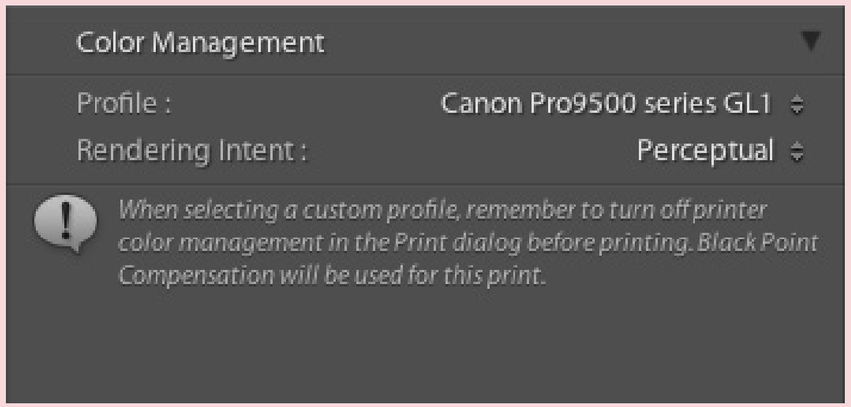
If you don't see any instructions on where to install the profiles you download, on a Mac OS X system you'll usually put profiles into /Library/ColorSync/Profiles on your system drive. On Windows they go in C:/Windows/System32/spool/drivers/color, where C: is your system drive letter. Change this first letter as necessary.

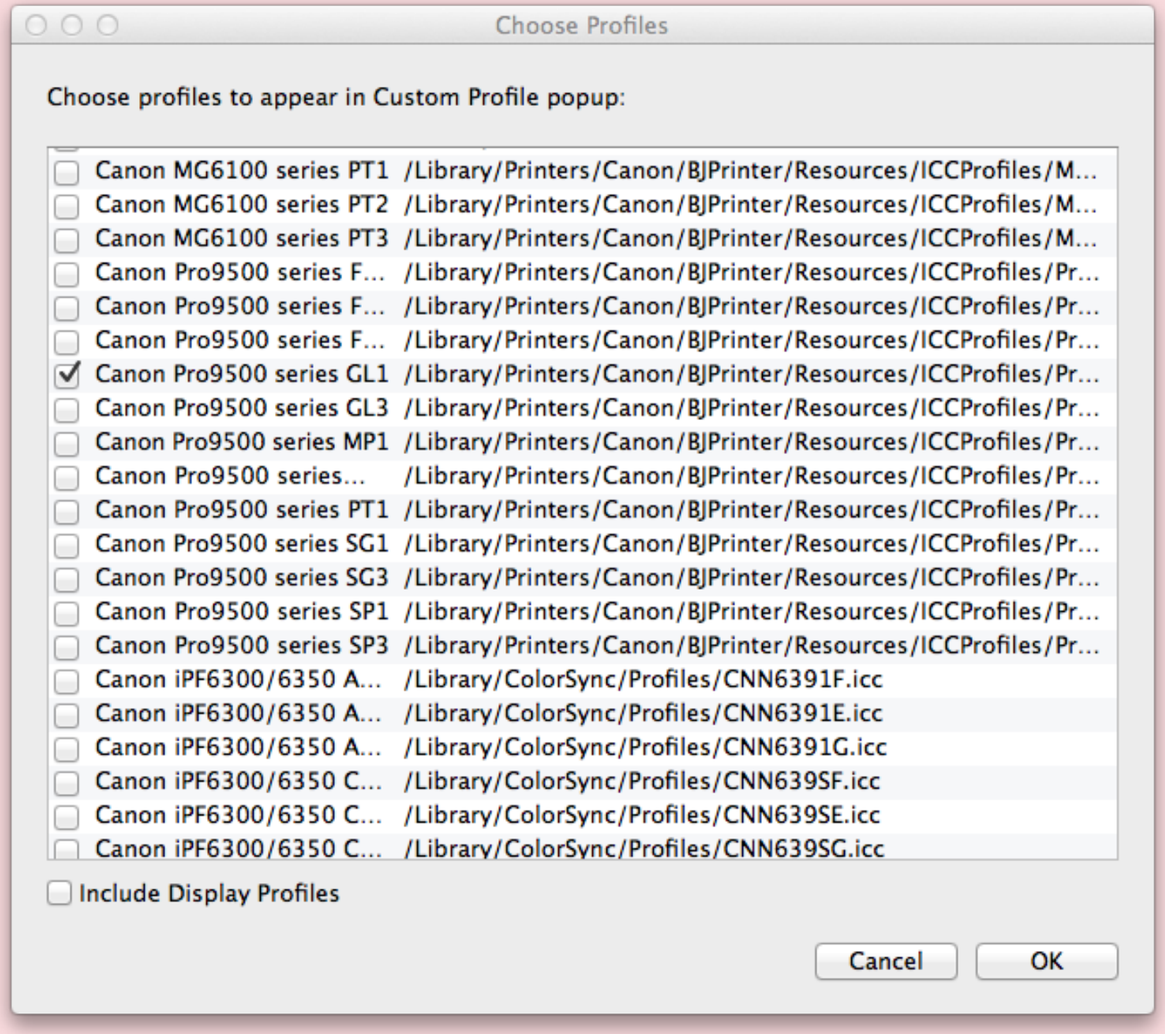


LET'S MAKE A PRINT!

Printing with Profiles – continued

Once you've got your profile installed, go back to that dialog box in Lightroom and, having selected Other at the bottom of the Profiles drop-down menu, locate the often cryptically named profile, select its check box, and click OK to return to Lightroom. You will now be able to select this profile in the Color Management drop-down menu.

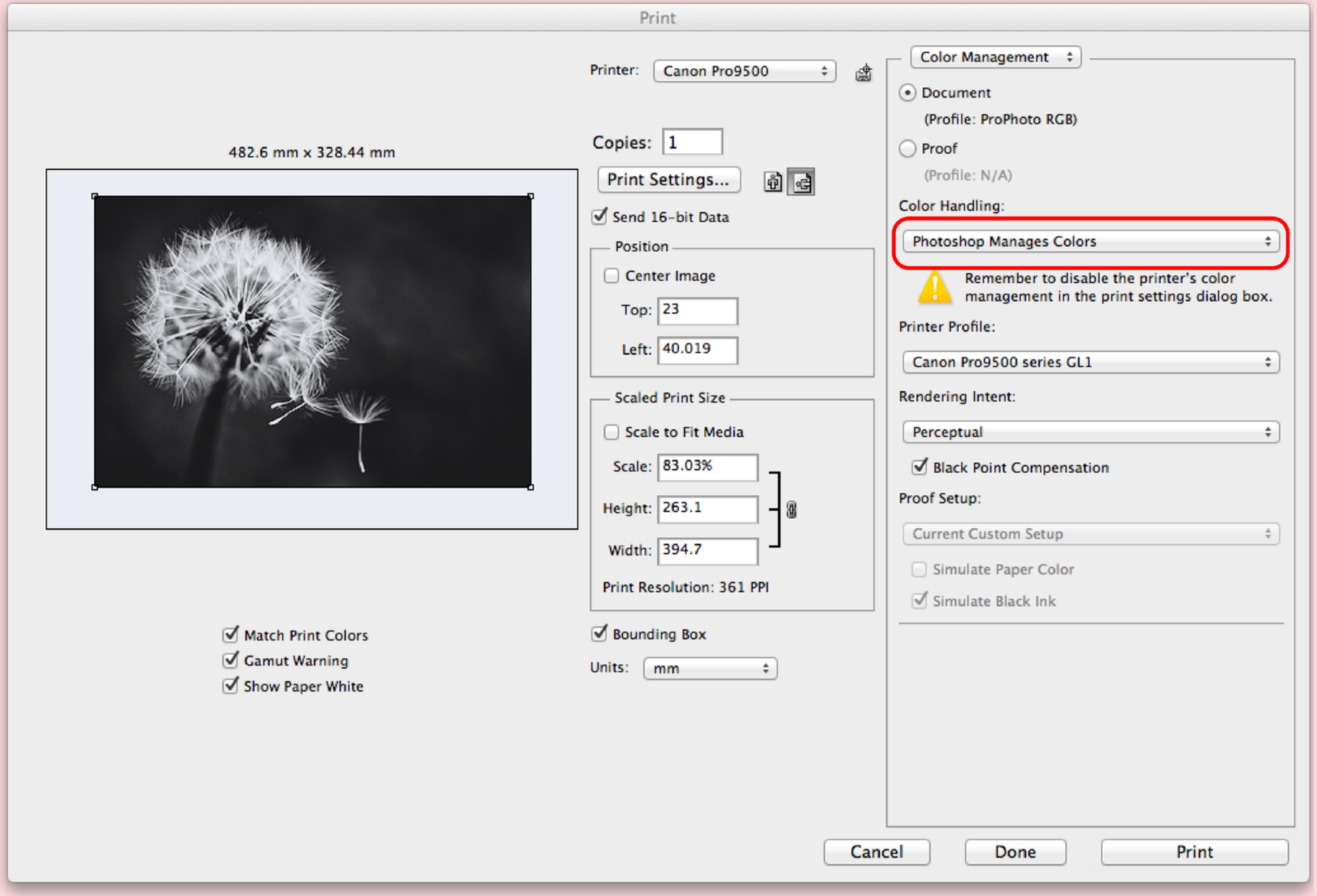




LET'S MAKE A PRINT!

Printing with Profiles – continued

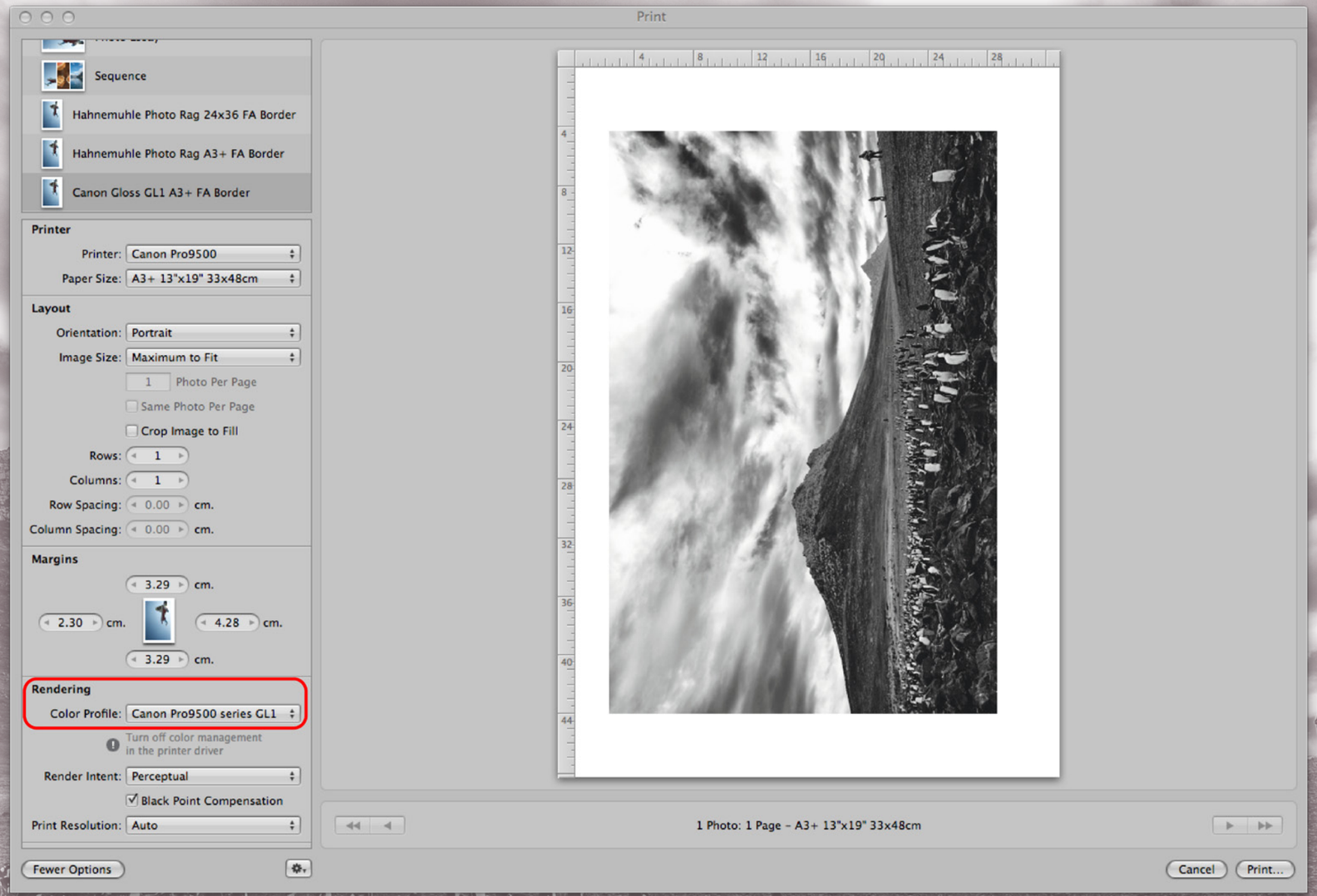
If you are printing from Photoshop, after selecting Print from the File menu, look for the Color Handling section on the right side of the Print dialog box, and change **Printer Manages Color** to **Photoshop Manages Color**. Then you'll be able to select the profile for your printer/paper combination in the Printer Profile drop-down menu.



LET'S MAKE A PRINT!

Printing with Profiles – continued

In Aperture, select **Print Image** from the File menu, and if you don't see a Rendering section, click the **More Options** button in the bottom left corner of the dialog box. Select your print profile from the Color Profile drop-down menu in the Rendering section.



LET'S MAKE A PRINT!

Rendering Intent

Another somewhat cryptic setting that we'll touch on here is Rendering Intent. You'll see this in Lightroom, Photoshop, and Aperture print dialog boxes, and if you just want good prints, select **Perceptual** and forget about this. In fact, of the potential four options, the only two you'd ever need are Perceptual and Relative Colorimetric.

These settings are basically telling the software how you'd like it to remap any colours in your image that your printer isn't able to print. **Perceptual** changes colours that your printer cannot print and moves them to nearby colours that it can print, but it also moves other colours nearby to the problem colour too, bearing in mind the relationship between the colours, so that the overall look of the image is still pleasing to the eye.

Relative Colorimetric remaps anything that cannot be printed to the nearest colour that can be printed, and leaves anything that can be printed as it is. This means that the relationship between colours that can and cannot be printed changes, sometimes destroying detailed gradations and causing patchiness in your printed image.

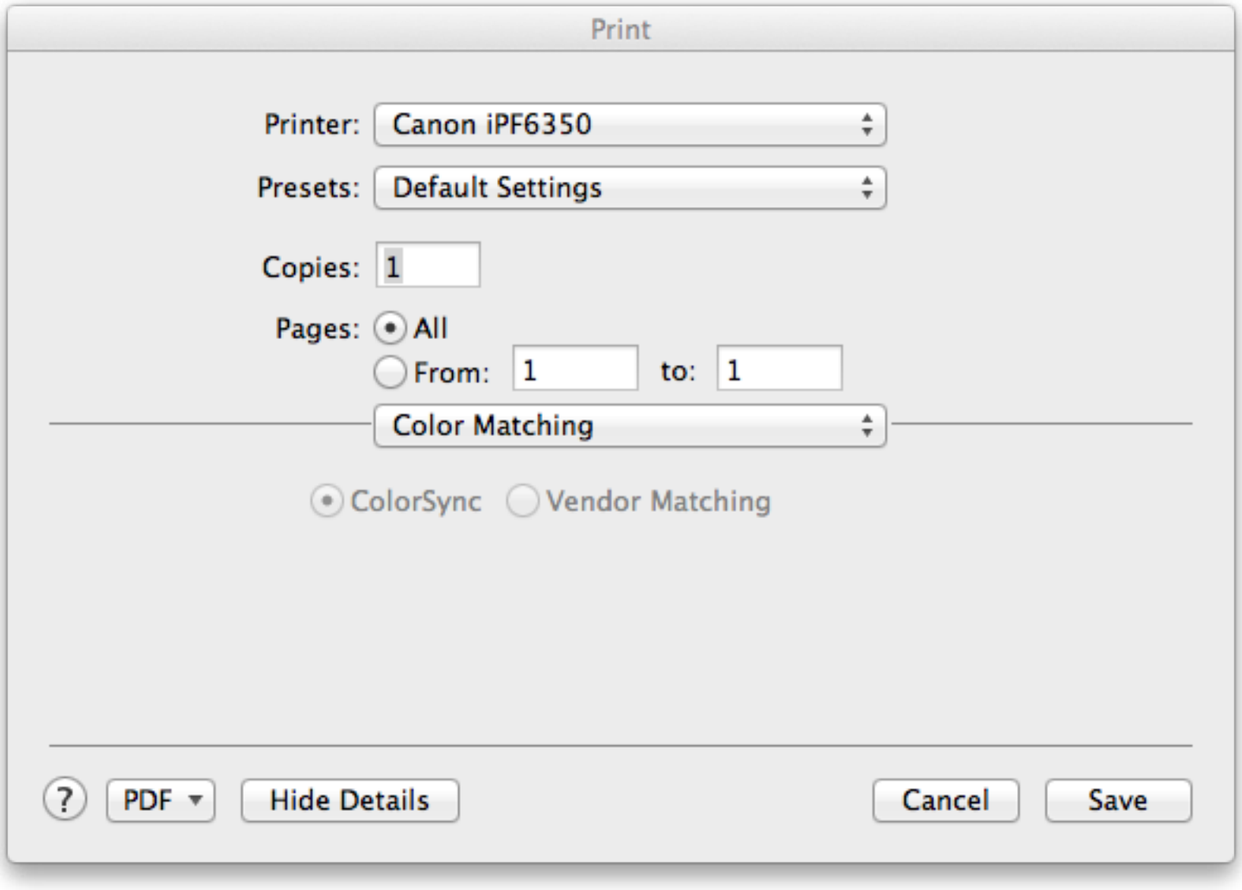
Depending on the colours in your image, Relative Colorimetric can do a better job than Perceptual, but generally, Perceptual will give more pleasing results. If blindly choosing Perceptual bugs you, don't worry. I'll show you how to compare the two while viewing their effect on your image later.

LET'S MAKE A PRINT!

Turn off Printer Color Management

Now that you have selected a print profile that was installed with your printer, or that you downloaded from a paper manufacturer, you need to remember to turn off any printer colour management in your printer drivers.

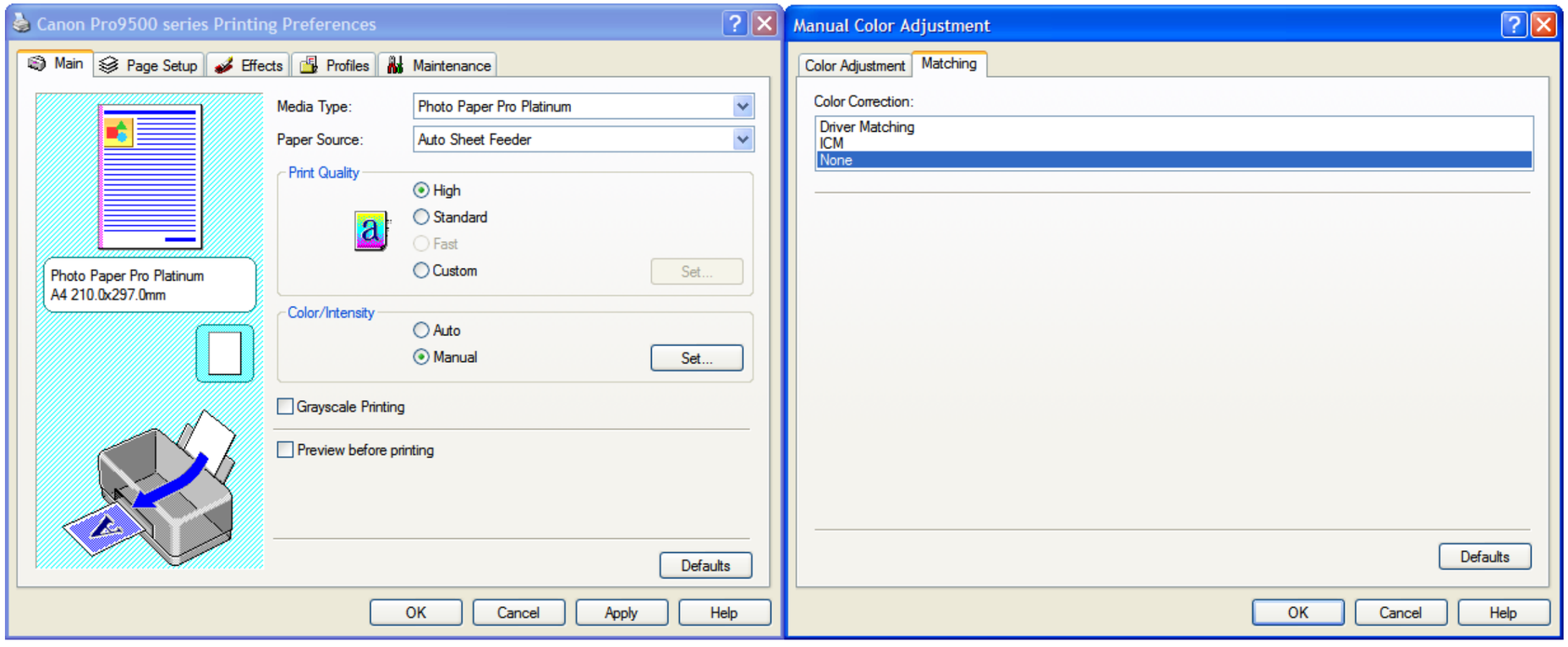
This dialog box is common to all applications. Currently, on a Mac it looks like ColorSync is selected, but the reality is colour matching is turned off automatically when you select a profile in your software, so you generally don't even need to worry about this anymore. I mention it here because the print dialog boxes in the applications we're looking at still alert you to the fact that you need to turn this off. This is where you check.



LET'S MAKE A PRINT!

Turn off Printer Color Management – continued

In Windows you need to select **Manual** under Color/Intensity, hit the **Set** button, then the **Matching** tab, before selecting **None** in the Color Correction list.



Profiles and Black & White Prints

ICC profiles are not just about colour. Black and white prints also need to be created using profiles. If you allow your printer's manufacturer to manage the "colour," even in black and white images, you can end up with an unwanted colour cast. Even if you intentionally tinted your image during conversion, you want to reproduce your intended tint, not something tinted in error. Use the same printing methods for black and white images, and they will be "colour" accurate too.

PRINTING WITH BORDERS

Most printers can do borderless printing (though not on all kinds of paper). It's common to print smallish prints to pass around without borders, but if you intend to frame your work with a mat (the bit of card with a window cut out that goes in front of your print), part of the image will be covered by the matte if you print without a border.

Often, prints look better with a border. Some printers even force a large border when you select fine art printing papers, because these papers are generally quite thick, and the printer needs to stop printing before you get to the end of the sheet to allow the printer to feed the paper properly and avoid related problems in the print.

An equally sized border all around your image is fine, but you'll often find that for a fine art print border, artists will print the image slightly above center, which leaves space for a signature and is more aesthetically pleasing. The proportions aren't set in stone, but I like to make my top border 7% and my bottom border 13% of the total height of the print. This means for example, if I am printing a photograph at A4 size, which is 297 x 210 mm, the top border will be 14.7 mm and the bottom border will be 27.3 mm. I also use 20% of the height of the print divided by two for the minimum width of the side borders. This works well with the native proportions of an uncropped DSLR image, often leaving a slightly larger border on the sides, but if I crop the image down to a panorama for example, I align the image to the sides with borders of 21 mm (totalling 20% of the paper height, not width). In Lightroom, if you leave the top and bottom borders at 7% and 13%, the actual borders will be larger, but the image will be raised above center, and the borders increased by an equal amount, so you don't have to worry about recalculating the top and bottom border sizes.)

PRINTING WITH BORDERS

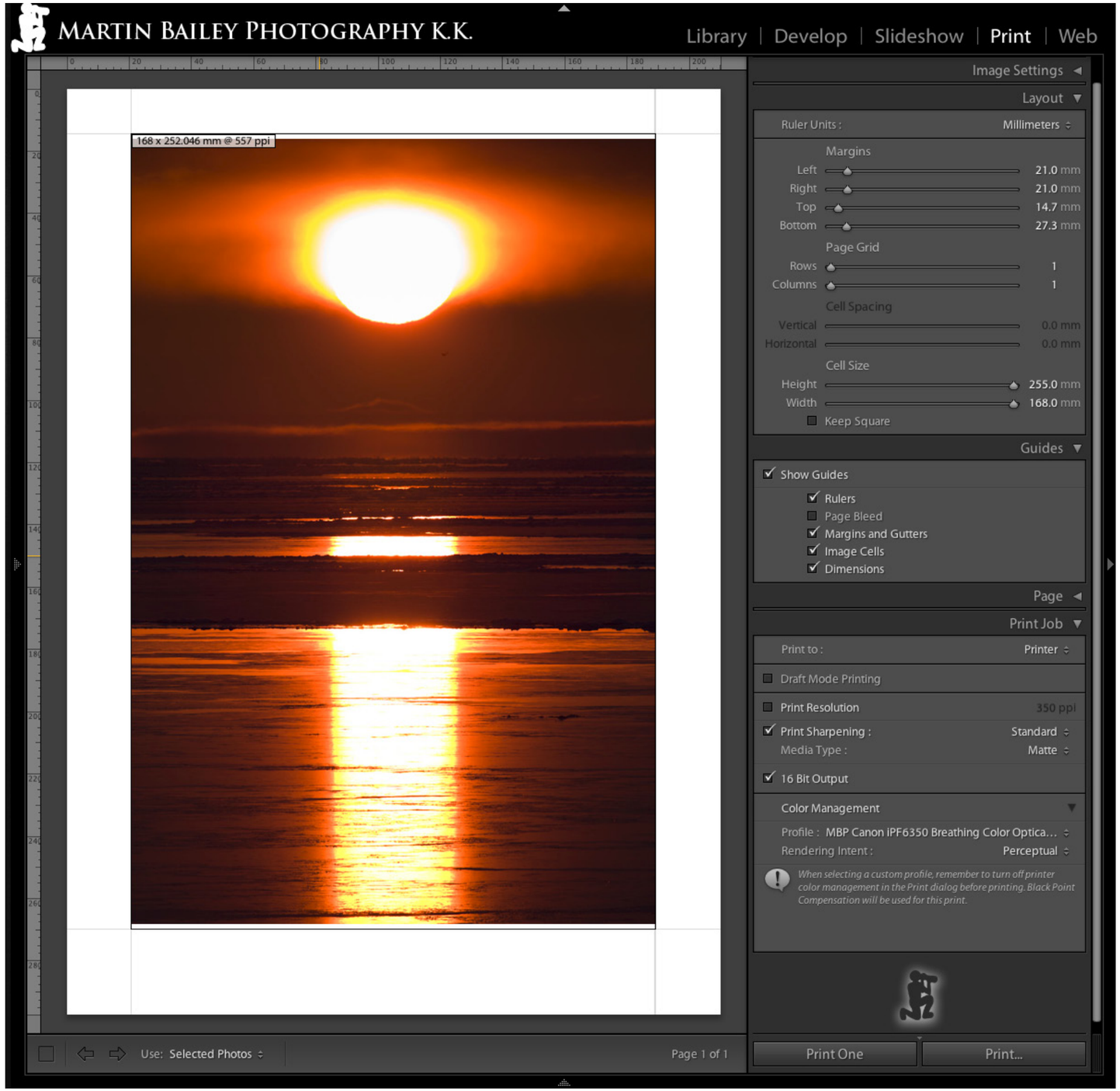
Borders are easy to add in Lightroom and Aperture before you print and you can save border sizes in presets, so you won't need to calculate these sizes every time you print.

When you want to print portrait instead of landscape mode images, just use the same border dimensions but flip them up so that the paper is in portrait mode. If you use the same off-center presets for horizontal and vertical images, your vertical images will print over to the left. I keep a set of presets for both vertical and horizontal use.

Note that I have a useful Excel sheet that automatically calculates border sizes that you can download here: ***http://mbp.ac/borders***

16 Bit Printing

One quick note about printing in 16-bit mode. If your software or operating system supports it, do select 16-bit output/printing whenever possible, as it helps to maintain any delicate gradations etc. that you might have in your images. Unless it slows me down considerably, my rule of thumb is to always go with the best or highest quality settings.



EVALUATING YOUR WORK

What Makes a Good Print?

When you hold your print, hopefully it will be an amazing feeling, and the hairs on the back of your neck will stand up, as mine usually do. Once the excitement has subsided, you'll want to check that there is detail where you expect there to be, and the colours are accurate, looking similar to what you see on your screen.

If you are not happy with what you see, check that you have not made a silly mistake when printing. Check that you selected the correct profile for your printer/paper combination or that, having selected the profile, you didn't forget to turn off colour management in the printer drivers.

EVALUATING YOUR WORK

Share Your Work

Printing for oneself can be incredibly gratifying—I have hours of fun in the studio doing just that—but when you have a small stash of prints that you are happy with, share them with others and see what they think.

This can be very scary, especially if it's the first time you share your work with others, but it will be very rewarding.

Family members are a great place to start, but also consider trying to get feedback from a few photography friends that you trust. The trust part is important, because if you don't trust and respect the person you seek feedback from, it won't carry much weight. If you value your reviewer's opinion, you will listen.

If they love it, and give you a big slap on the back, that will feel great, and you'll be all fired up to make more prints and hopefully more photographs to print too. To make this exercise useful though, try to ask your trusted viewer why they like the work. Not everyone will be able to articulate why they like it, but if they can, that can help you to understand what people like, and may help in your future work. You don't necessarily have to be steered by others' desires and opinions, it's your art, but if you hear something that clicks with you, about the print itself or the base images, take it on board.

If you receive some negative feedback when sharing your work, that's great too! Again, if you respect the opinions of the person that gives you the feedback, and that feedback really clicks with you, take that on board too. You can then try to work on the problems that were pointed out to you, be it in the print, or more likely the initial photograph. Either way, sharing your work is a win/win exercise.

FRUSTRATION FREE PRINTING

So now that you've gained a good printing foundation—darkened your display and taken a little more control by selecting your media type, profile, and rendering intent, and turned off any colour management by the printer—hopefully printing has become a whole lot less frustrating than it used to be.

If you are still feeling a little bit confused or frustrated, please do stick with it for now. Believe me, it becomes second nature once what we've discussed so far sinks in, and once you've been doing it for a while.

What you are now doing removes a lot of the guesswork from your printing. Granted, depending on your printer's ability to reproduce the colours in your images, especially if it's a few years old, there will still be times when you can't get great colour reproduction with what we've covered so far.

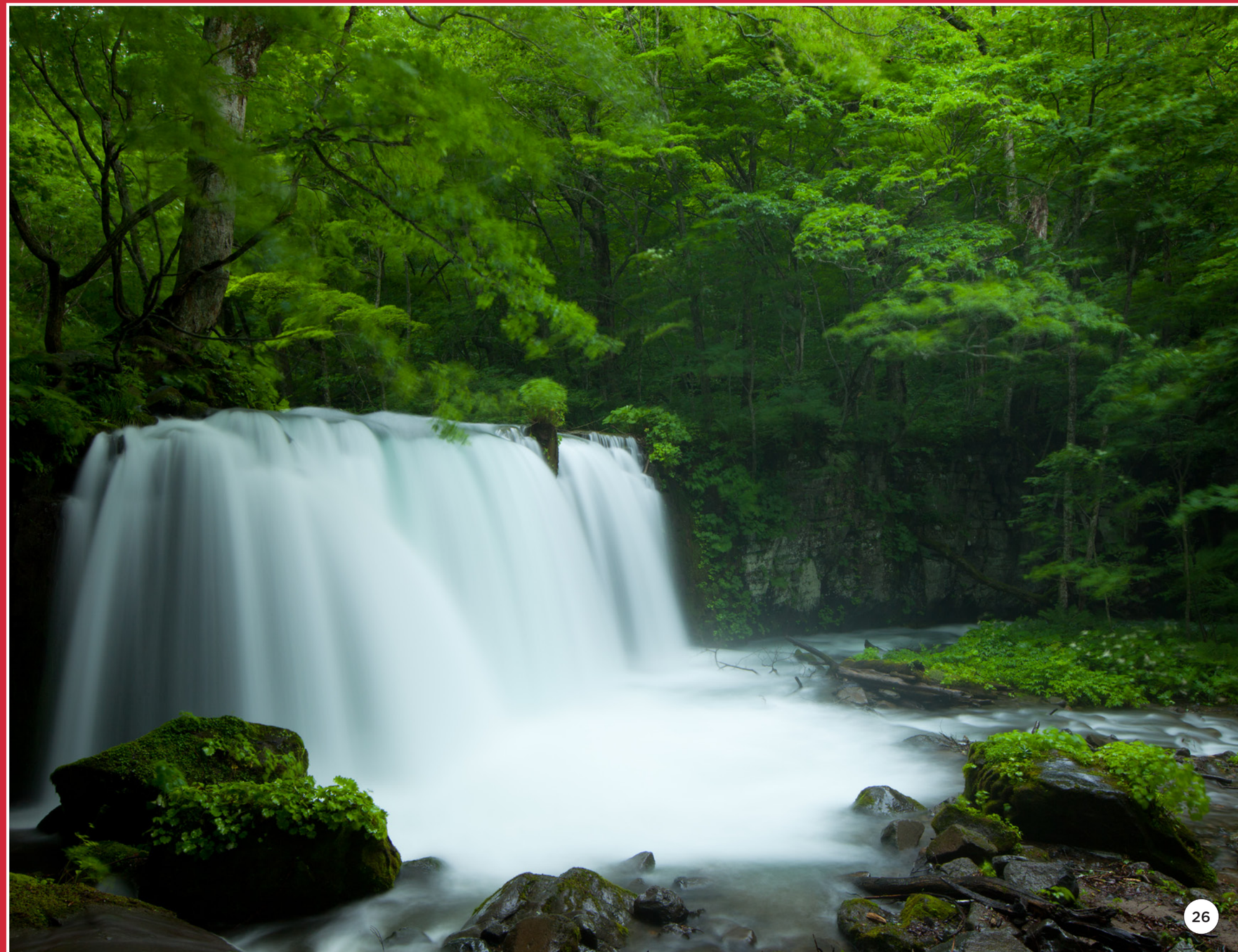
In part two, we're going to step it up! We're going to really take your printing to the next level. Don't worry, we aren't going to geek out and get overly technical. The more enjoyable and frustration-free this is, the more you'll want to print.

PART TWO: STEP IT UP!

COLOR MANAGEMENT

For years, people have talked about ensuring that your display is calibrated so that you know that other people will see your images the way you see them. Although it certainly helps to have a somewhat standardized starting point, you have absolutely no control over how other people set up their computers and displays, so please don't think that colour management will magically enable everyone to see your images as you do.

What colour management will do however, is enable you to take full control of your own digital workflow from capture to output. In part one, I gave you some pointers on how to take a good guess at your monitor brightness, and how to take some control over your printing by specifying printer profiles as you output your images. Hopefully this will have removed some of the stress, but you are still relying on third parties and guesswork. It's time to go beyond that.



COLOR MANAGEMENT

Monitor Calibration

OK, so we darkened down your monitor earlier to make what you see on your screen closer to what comes out of your printer. To really set the optimal brightness and get color accurate prints, you have to calibrate your monitor.

There are various calibration tools on the market, ranging from less than a hundred dollars, to over a thousand. If you have already tried third-party printing profiles and are happy with the results, then you might be fine with a calibration tool that will only calibrate your display, such as the X-Rite ColorMunki Display (at around $169), the X-Rite i1Display Pro (at around US$249) or the Spyder3Pro display calibration system from Datacolor (at around $130).

If you are interested in calibrating your printer too (read on to decide) the X-Rite ColorMunki Photo is a great place to start (retails at around $450). The ColorMunki Photo does a great job of calibrating your monitor and printer, and will also calibrate projectors. Datacolor has the Spyder3Print SR, for printer calibration, which you can buy separately or as part of a larger set called the Spyder3Studio SR package (around $540). This is a full solution that will enable you to calibrate your display as well as create printer profiles.

My personal preference is the X-Rite i1Photo Pro colour calibration solution. This comes with various profiling patch sets, as well as the ability to create your own patch sets based on the number of colours sampled, ranging from 294 to up to 6,000 patches. This enables you to create more accurate printer/paper profiles, but this does have a price tag of around US$1,200. If that has you shaking in your boots, I recommend the X-Rite ColorMunki Photo.

COLOR MANAGEMENT

Monitor Brightness

As we discussed earlier, dark prints are often the result of display brightness being set too high. Most calibration tools have the option to either automatically control your display's brightness, or to guide you to set it yourself, and this starts with an accurate reading of the ambient light in your workspace. Under lighting conditions that you use the most, take an ambient light reading according to the instructions from your calibration software.

Here I'm using the X-Rite i1Pro Spectrophotometer with the Ambient Light Measurement Head attached, to measure the ambient light in my studio at the start of the calibration process.

COLOR MANAGEMENT

Monitor Brightness – continued

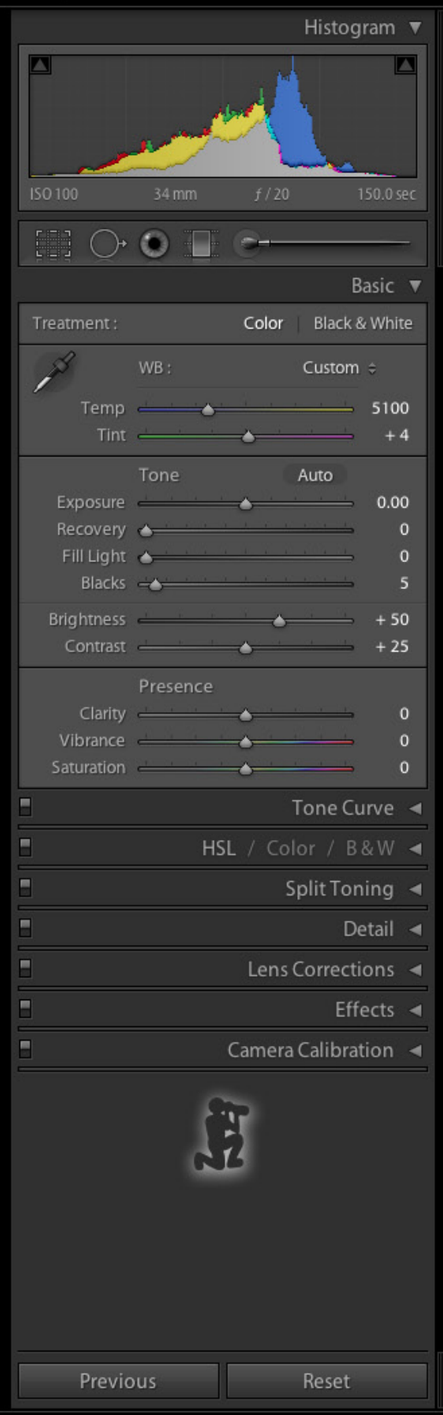
Once you have an ambient light reading, you'll place the calibration tool onto your display and one of its first tasks will be to check the Brightness of your display against the ambient light reading. Then, depending on your settings, it will either automatically adjust the brightness and move on, or you'll see a dialog box with an indication of how bright or dark your monitor is. You'll then change the Brightness until you get as close to the indicator as you can.

This will probably result in you turning your display's brightness down to around one third of its full brightness, possibly lower. As you can see here, one of my displays gets set to 12% Brightness! This can be a shock to the system. At first your images will look dark, and it will feel horrible, but I assure you, once you've worked like this for a few days you will get used to it.

COLOR MANAGEMENT

Find Comfort in the Histogram

Just to recap, at this point, even with your new darker display settings, you should find comfort in the histogram. I won't go into details again, as we covered the histogram earlier, as well as how to correct unintentionally dark or light images. If you find that your exposure was out a little or maybe even a lot, do try to get a handle on that in camera when shooting. Although the software available to us today does a great job, correcting exposure in post-processing is always a destructive process, introducing grain and other digital artifacts that you may not want.

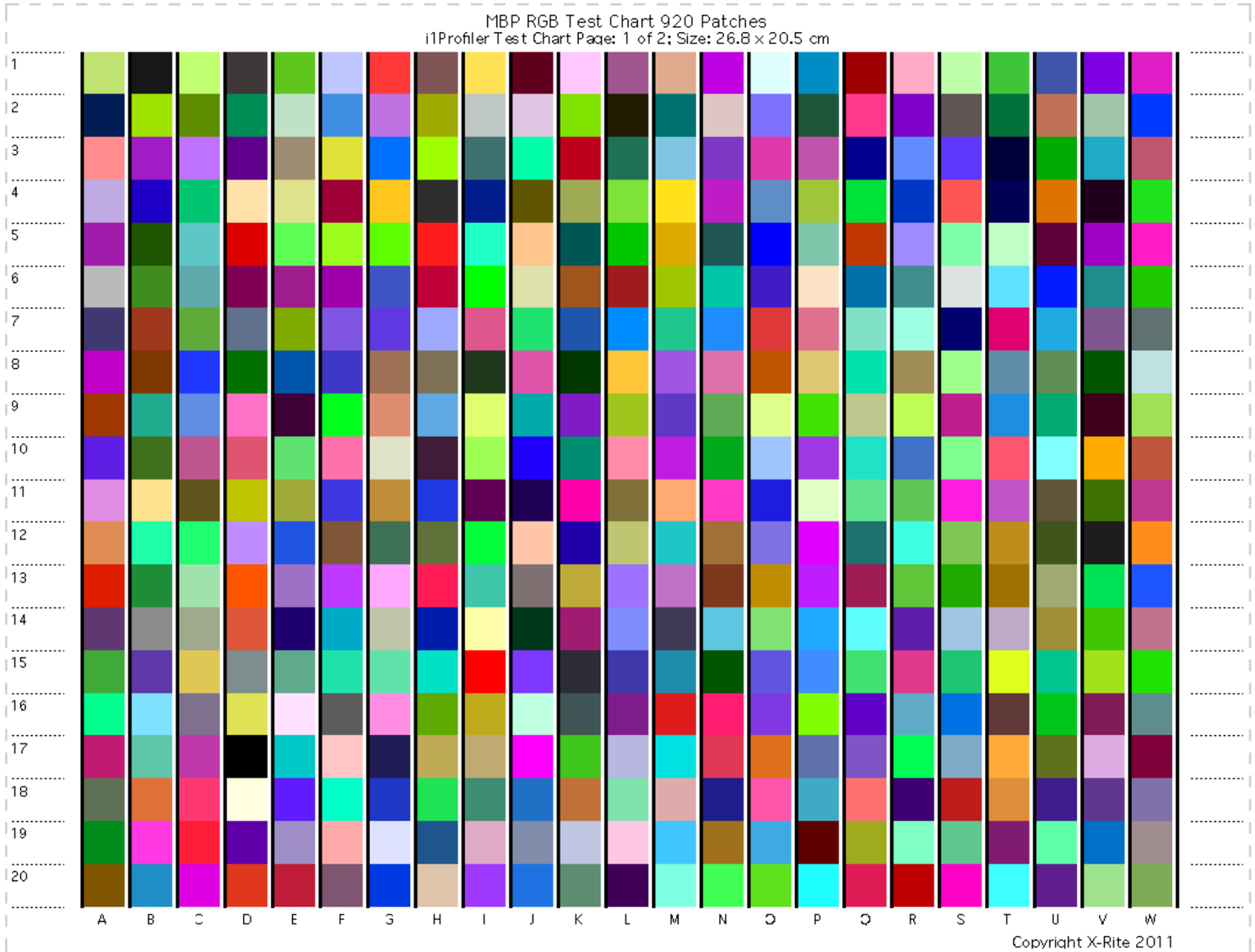


COLOR MANAGEMENT

Printer Calibration

We already learned how to print using profiles that are installed with your printer or downloaded from your printer manufacturer or a third-party paper manufacturer's website. Although these profiles will often provide adequate to great results, there is one problem with downloaded profiles, and that is that they were not created using "your" printer. Although printers made on a production line should ideally be identical, there are always slight differences in the print heads and the printing environment that make each one create slightly different results. By all means, try the profiles available to you first, but if you are dissatisfied with the results, you might want to really take control of your print output, by creating your own printer profiles.

Using the software that came with your calibration tool, you will be prompted to print one or more pages of colour patches for each type of paper you print to. Having printed the patches and usually giving them a little time to dry, you will use your calibration tool to scan the patches, measuring the colours to allow the software to create a profile that maps what your computer sees, to what your printer can create.

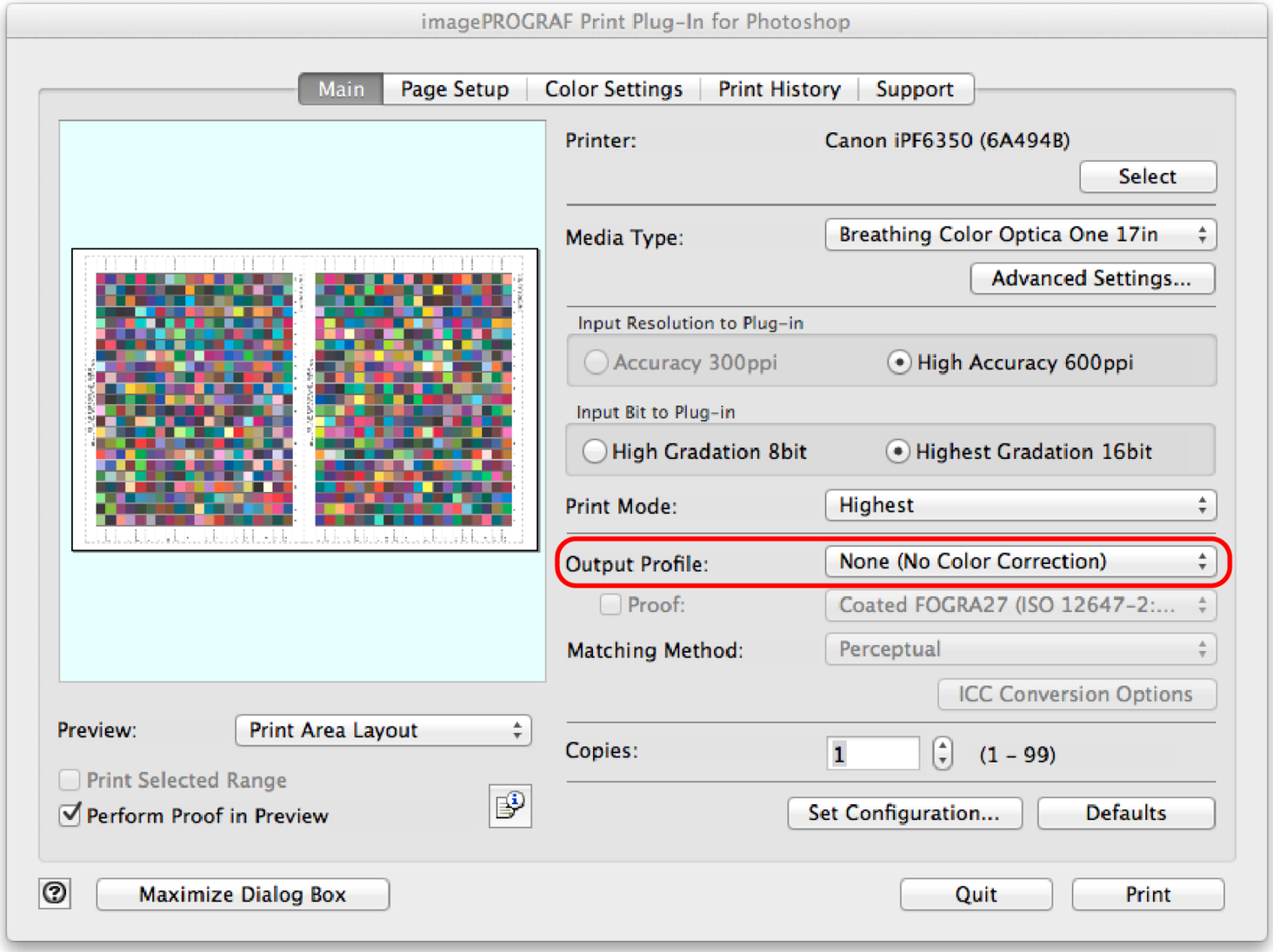


COLOR MANAGEMENT

Printing Patch Sets on Large Format Printers

Some profiling programs, like X-Rite's i1Profiler, have the ability to export the patch sets as a TIFF file, which can make printing on large-format printers with roll paper easier. If you have two pages to print, for example, you can open the first in Photoshop, then expand the canvas out to 200%, doubling its size, then place the second page beside the first. I often print two images together, one on top of the other, on 17" roll paper, or side by side on 24" roll paper, depending on what paper stock I have.

This saves me from cutting the roll paper into letter (8.5" x 11") or A4 sized sheets to print my profile targets on. However, doing this does force you to print your targets outside of the profiling software. It's easy enough, but when printing from Photoshop, Lightroom, or Aperture, ensure that you turn off all colour management, so neither the printer nor Photoshop tries to correct the colour. If this happens, your profiles will be inaccurate. If you do mess up, the resulting images you print with that profile will look terrible, so it's easy to see if you get this wrong.



COLOR MANAGEMENT

Scanning Printed Patch Sets

With ColorMunki patches, it's literally a 30-second job to swipe across a few lines of patches. I've used the ColorMunki and was very happy with the results, but I now use the X-Rite i1Photo Pro kit, and output 920 patches on two pages, which takes a little more time to sample, but you are aided with a holder for the pages and a ruler to guide the calibration device, It's a relatively quick process. There is also an i1 Photo Pro i1iO chart reader, which is a robot that scans pages for you, but in my opinion, you really need to be creating a lot of profiles to warrant that additional expense.

Note that if you buy a large-format printer, if you don't have it installed by a professional, you will need to run a calibration process on the printer itself after you install the printer head or heads. Do this before you do any paper profiling, as running the calibration on the printer can change how it prints, and you would need to recreate your profiles. I found this out the hard way.

COLOR MANAGEMENT

Naming Your Profiles

When I started to profile my printer/paper combinations, I named the profiles with the name of the printer and the paper, something like "Canon Pro9500 Hahnemühle Fine Art Baryta". The problem with this is that your profiles will look very similar to the ones provided by the printer or paper manufacturers, which makes them difficult to find in a list. Once I realized this, I started to prefix all my profile names with the letters "MBP". In my case, this stands for "Martin Bailey Photography", so you'll use something unique to you or your workflow. Maybe your initials or the acronym of your company name, but do add something unique to make locating your profiles in a list easy. We covered how to actually locate and select profiles earlier. It's exactly the same process for your custom profiles.

Best Results Possible

Now that you have created your own printer profiles for each of the types of paper that you want to print to, you've joined an elite club of truly passionate printers and will achieve the best possible results from your printer. The process is easy once you've done it a few times, and this is a good thing, because you should do it for every paper you print photographs on. You can of course download the paper manufacturer's profiles and try them first, and only create your own profiles if you see any problems, but I personally prefer to profile everything. Yes, I'm a control freak, and you might not be, but this practice has helped me to achieve high-quality colour-accurate prints with little effort. Well, actually, there is a little more to this colour-managed digital workflow that really closes the circle, and that's calibrating your camera. Here's how it works.

Camera Calibration

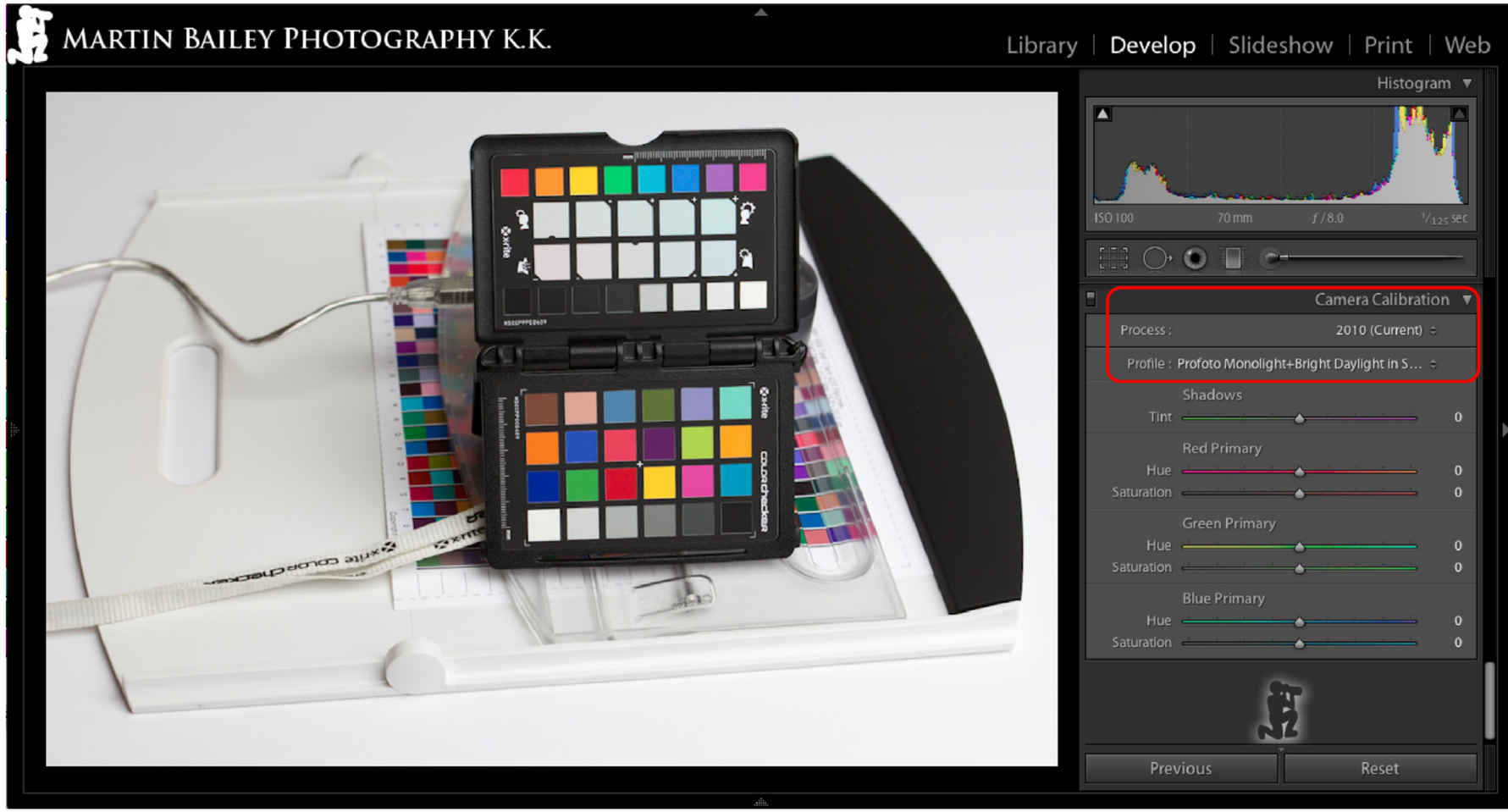
I left this to the end of this section to avoid scaring you, but to totally close the digital colour management loop you need to start in-camera. For the most colour-accurate images that you can get, you can photograph an X-Rite ColorChecker Passport under the same lighting conditions that you photograph your subjects, and then export that photograph to an X-Rite plug-in for Lightroom or use a standalone application that comes with the ColorChecker Passport to create profiles for use in Adobe Camera RAW in Photoshop or Lightroom.

COLOR MANAGEMENT

Camera Calibration – continued

There are two workflows with the ColorChecker Passport. For one, you use a grey card included in the ColorChecker to set a custom white balance in your camera, then you shoot the colour patch target you see here. The second workflow is to ensure that you get a photo including the ColorChecker Target, and then adjust your white balance with the White Balance Picker in Lightroom or Photoshop, by clicking on the neutral grey patch on the ColorChecker before you export the photo to create your camera profile.

Once you've created a camera profile you simply assign it to the other photographs from that session using the Camera Calibration to tell these applications how to render the colour in your photographs. It's very easy to do, and really helps to get accurate colours in your images, before you start to even think about printing them.

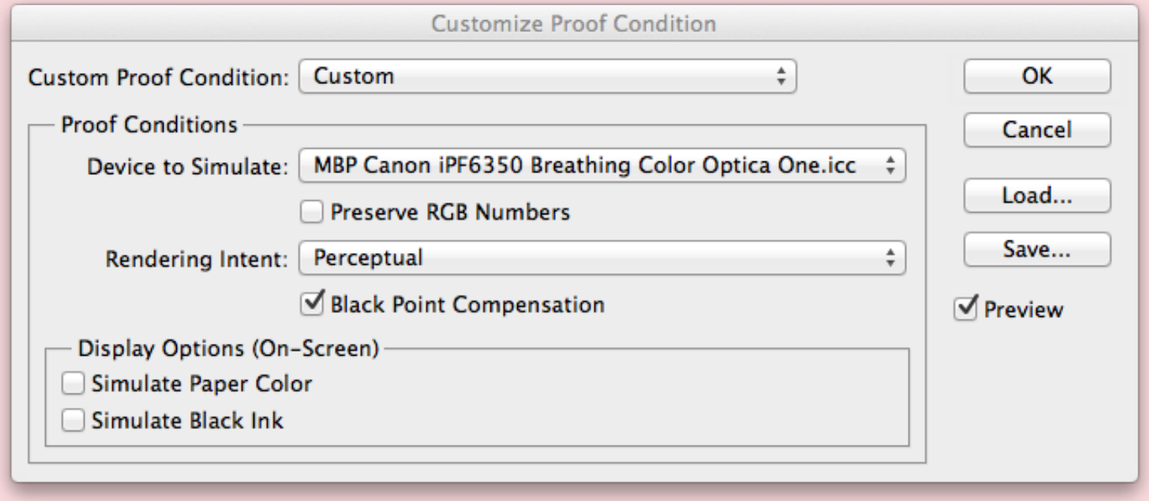


SOFT-PROOFING

If you've calibrated your monitor, are using printer profiles instead of allowing your printer to control the output colour, and maybe even using something like the ColorChecker Passport to calibrate your camera—really closing the loop on a fully colour-managed digital workflow—you should now be printing pretty much all of your work without much trouble. But, there's always an exception, and the fact is that although the printers have gotten incredibly good at reproducing a huge gamut of colours, they do still have weak spots.

You may never run into problems. It really depends on the colours and gradations in your images. I find that sometimes subtle shadow areas of fresh foliage can be troublesome, as can very vivid reds, and when I see these colours in an image I'm about to print, I will open them in Photoshop to do a soft-proof. I don't imagine it will be too long before you can do this in Lightroom (note the update below) but for now, let's take a quick look at how to do this in Photoshop. Again, you can get really hung up on this stuff, and there is much more to this than we'll touch on here, but this will give you an idea of what soft proofing is all about if you don't already use this technique.

Open the image that you want to soft proof in Photoshop, and from the View menu select **Proof Setup**, then **Custom**. Ensure that the **Black Point Compensation** and **Preview** check boxes are selected, and select the profile for the printer and paper you intend to print to from the **Device to Simulate** drop-down menu.



As mentioned earlier, it's usually a safe bet to select Perceptual here as the rendering intent, but if you want to check what the image looks like with the Relative Colorimetric intent, select it here and take a look.

With the Preview check box selected, you'll see the image you have open change straight away, but if you click OK in this dialog box to close it, you can then press Command + Y on a Mac, or CTRL + Y on Windows to toggle between the soft proof view and the standard view of your image. You'll be able to see as you toggle how much of a colour shift you have to deal with. If the shift is minimal, you might choose to just go ahead and print without tweaking the image. I often find that the print looks great anyway, and if the print looks good, I'm happy.

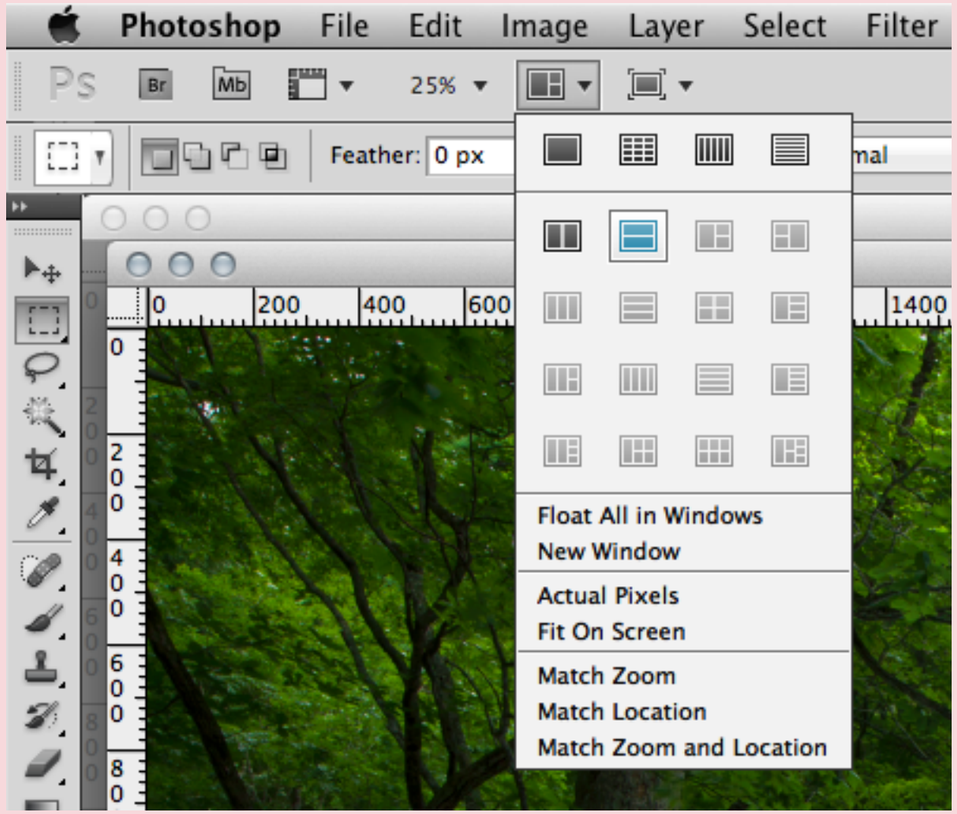
Update: As we finalized this ebook for release, the Lightroom 4 public beta was released, and indeed does have Soft Proofing. It works incredibly well, though functionality may change as Adobe fine tune based on user feedback. I will be covering soft proofing and other updates to Lightroom on my blog in the coming weeks. Search for "Lightroom 4 Soft Proofing" at ***http://blog.martinbaileyphotography.com*** for more information. For now, let's continue with the original text, and take a look at how this is done in Photoshop.

SOFT-PROOFING

However, if there is a marked shift in colours, don't try to adjust the image without a visible baseline to compare to. Under the Image menu in Photoshop, select **Duplicate**. In the Duplicate Image dialog box, I generally go right ahead and append something like "Soft Proof for Breathing Color Optica One" to the file name.

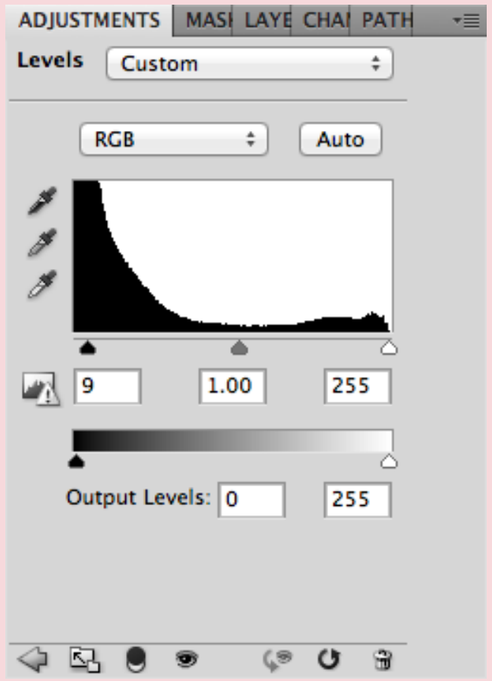
Then from the Photoshop toolbar, select one of the "2 up" window arrangement options, to show both your original and your soft proof image side by side or above and below each other. This enables you to compare your changes to your original image as you work. Make sure soft proofing is turned on for your duplicate image, and start tweaking. If you have to move the windows around to see a particularly nasty part of your image, select the Hand Tool, and turn on **Scroll All Windows** first. This saves you from having to align both images individually.

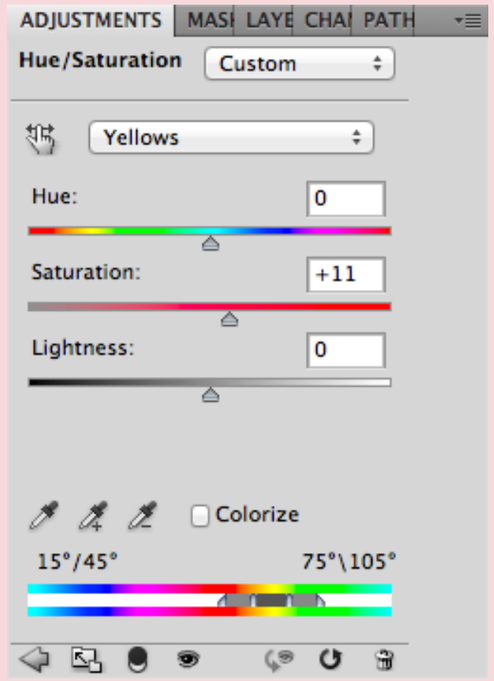
The objective is to correct the colour shifts as best you can, but you don't necessarily have to create something that is identical to the original in your soft proofed version. I often find that the Photoshop soft proof view shows more detail in the shadows than the original. If this is true in the final print, you might choose to keep that shadow detail. I also find that the final print does lose a bit of that detail again anyway, so counter-ing it is, well, counterintuitive, if you see what I mean. Basically, use your artistic license here.

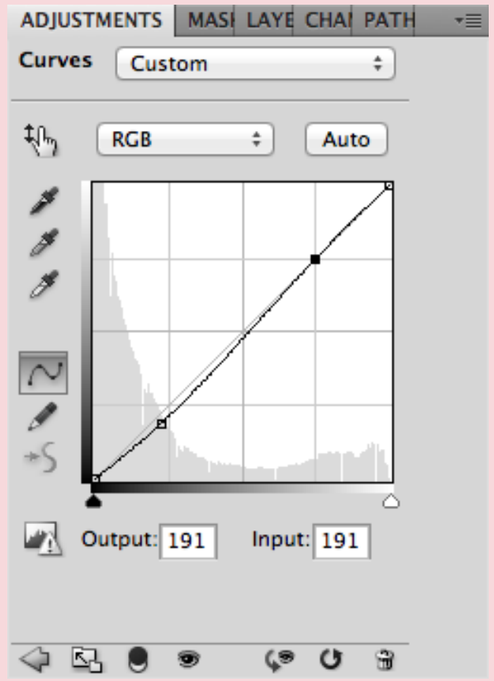


SOFT-PROOFING

The most common controls I use when soft proofing are Levels, Saturation, and Curves. You have to experiment to find what works for each image. I find, for example, that to get good fresh green, you are better off adjusting the yellow channel saturation in Hue/Saturation rather than the green channel. If you do end up having to soft proof an image, this is probably the last area of printing that sometimes can be a little frustrating if you try to get your image perfect.







Don’t Spoil the Fun!

There are all sorts of techniques that I’ve seen used when soft proofing, and preparing for print in general, including using masks to apply the affects to just certain areas of the image, doing selective sharpening, etc. If you start going overboard trying to match your original though, you’ll end up tearing your hair out and spoiling the fun that you’re supposed to be having. Soft proofing sometimes shows the image a little worse than the printer can handle, so without going crazy, get the image relatively close to the original, and just go ahead and print it! It’ll probably look fine. I really don’t do a whole lot of work on my prints, and I’m still very happy with the process and the results, as are my customers.

FINE ART PAPERS

Holding a physical, tactile print in your hand is always a wonderful experience, but when you print on good quality heavy fine art paper, it can really take that experience to the next level.

Why Use Fine Art Papers?

It can be for as simple a reason as “because they’re beautiful”, but there are some serious factors to bear in mind when choosing your paper. If you sell an image as a fine art print for example, you have to be totally confident that your materials are archival quality. True fine art papers are often 100% cotton based, acid and lignin free, and archival or museum quality. Fine art papers are usually certified to last at least 100 years. All manufacturers of fine art papers that I’ve come across publish data sheets on their papers, so you can check the archival qualities before you buy.

Using fine art papers doesn’t totally guarantee that your prints will not fade. Even fine art prints will fade if hung in direct sunlight for a long time, but then so did traditional silver halide prints. To get the longest life out of prints they should be stored in archival boxes with humidity control like a museum, but that’s no fun either. I generally want my customers to enjoy my prints, so I never dissuade them from hanging my work on the wall, although I do advise them to hang prints out of direct sunlight when possible. I am confident that the papers that I select will last longer than traditional silver halide prints, and probably much longer, under the same conditions.

FINE ART PAPERS

Fine Art Paper Finishes

Fine Art papers come in a variety of finishes including gloss, luster, and matte. Some Fine Art Papers are ultra smooth, while others range from slightly to heavily textured. Which you work with is of course up to you. My personal preference is Breathing Color's Optica One, which is a smooth matte paper, and I've also used and really like Hahnemühle's Bright White Photo Rag, which is another relatively smooth matte paper. When I need a glossy finish, I now reach for Breathing Color's Vibrance Rag, and again, Hahnemühle has their Fine Art Baryta, which is very similar. All are archival-quality fine art papers.

I love the smooth rich look of well-made matte prints on good-quality fine art papers. They look great under glass and very sophisticated when held in the hand too. Some people don't like matte papers because they think the prints look "washed out." This is generally a problem that comes from poor printing on low-quality matte paper.

FINE ART PAPERS

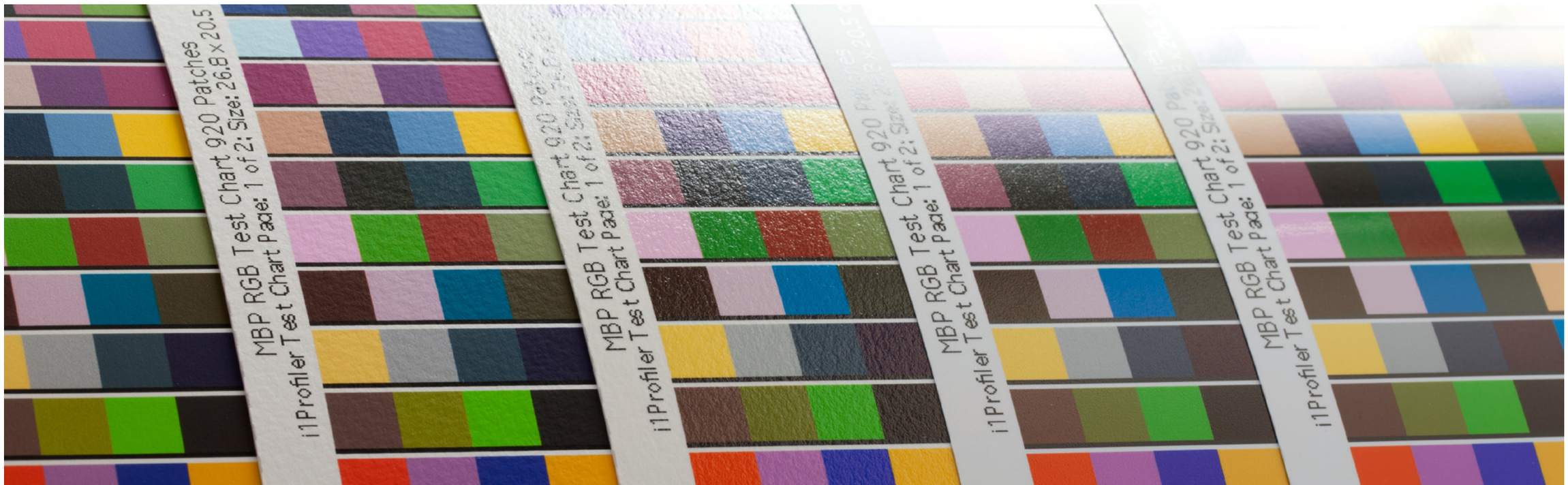
Fine Art Paper Finishes – continued

Here we see five papers from Breathing Color, to give you an idea of the finish of each. From left to right we have Optica One, Elegance Velvet, Vibrance Rag, Vibrance Luster and Vibrance Gloss. If you look closely you'll see that Optica One is a very smooth matte paper, and although still a matte, Elegance Velvet has a beautiful subtle texture. Vibrance Rag is also textured but this has a baryta gloss finish.

The fourth paper along, Vibrance Luster, is just that—a very nice luster paper, and the Vibrance Gloss is a totally smooth gloss paper.

Of course, the other thing I intended to impress on you with this photo is the reflectivity of luster and gloss papers. This is not a bad thing as such. When viewed directly, these gloss papers have punch and feel like the old traditional prints we held as kids. If you are concerned about reflections though, just see how those two matte papers suck up the light. Nothing is reflected, and they have deep blacks and unbelievable colour reproduction too. These are the main reasons that matte papers are my personal favourite.

If you decide to give Fine Art papers a try, or if you simply haven't tried Breathing Color paper yet, my suggestion would be that you treat yourself to some of their papers. You can only buy them from the Breathing Color website. Check the Resources section at the end of the document for their URL and a special voucher to save you some money.



LARGE FORMAT PRINTERS

What is Large Format?

Canon's large-format printers start from 17" wide and go up to 60" wide. This is the width of the paper that you can feed into the printer, not the physical width of the printer. HP and Epson also make excellent large-format printers. Epson's line-up ranges from 17" to 64" wide, and Hewlett Packard's large-format printers range from 24" to 60". These are mostly quite hefty machines so do think carefully about how much room you need and whether or not your home or office can structurally support such a behemoth.

I decided on a Canon imagePROGRAF iPF6350 24" wide printer as my office/studio is on the third floor of my apartment and at around 146lb or 66kg with the stand, I figured this was about as heavy as I could go. I'd have liked a 44" model, but I was advised that it's really necessary to keep anything larger than the iPF6350 on a ground floor or basement room with a concrete floor.

LARGE FORMAT PRINTERS

Pigment or Dye-based Inks?

Unless the technology changes significantly, you'll generally want to ensure that any large-format print you look at uses pigment inks. Other than dye-based or solvent printers, most large-format printers at this time do use pigment inks because they are quick drying, very stable and more archival than dye-based inks.

Benefits of Large Format

There are many benefits to running a large-format printer over a 13" x 19" Super B or smaller printer. The most obvious benefit is that you will be able to create larger prints. Some people will argue that a print doesn't have to be large to be good, but having been in the business of selling fine art prints for six years now, I can tell you that larger prints are more popular and sell for a higher profit margin.

The running costs of large-format printers are much lower than smaller printers. The cost of ink for an A3+/Super B, or 13" x 19" printer can be around $12–$15 per cartridge, so if you have a ten-colour printer, it could cost you around $120–$150 to fill her up. This might not sound so bad, especially when you consider that ink cartridges for my imagePROGRAF iPF6350 24" large-format printer cost $79 each!

Let's break that down to ink per dollar, though. My Pro9500 13" x 19" printer's ink cartridges hold 14 ml of ink, equating to 140 ml of ink in a full set, which is approximately $1 per millilitre. On the other hand, my iPF6350 large-format printer's ink cartridges at $79 hold 130 ml of ink. The printer uses 12 cartridges so it costs $948 to fill her up, giving me 1,560 ml of ink, so we're looking at about 1.6 ml of ink per dollar. As ink is the main running cost of a printer, this is quite a significant saving.

Another benefit is that you can print using roll paper, which saves time because you aren't forever feeding sheets into the printer, and there is no waste when creating off-sized prints. For example, I can create 24" x 36", 24" x 24", 20" x 24", and 16" x 24" prints and more using 24" roll paper, without any waste between prints. You can't even buy some of these sizes in sheets, but if you could, you probably wouldn't try to keep stock in all of these sizes, because of the cost involved. I can of course also use the smaller 17" roll paper too, offering sizes like 17" x 24" and 11" x 17". Using roll paper allows you to offer more sizes than you realistically would with a sheet printer and with little to no waste.

On a similar note, you can also create super long prints. If you create very wide panorama images, you can print them out at the width of your roll paper up to the maximum length printable on your printer. On my imagePROGRAF iPF6360 that's 59 feet (18 meters) long. That would give you one hell of a panoramic print!

Another area that really opens up to you with a large format printer is gallery wraps and similar products. These enable you to offer products to your clients that previously required outsourcing. If you enjoy the process, creating gallery wraps yourself can be very rewarding. We'll go into detail on this process shortly.

LARGE FORMAT PRINTERS

When to Buy?

Even with a relatively well-known name and established brand, selling prints is nowhere near as easy as you might think, so jumping in with a large format printer is not advised unless you already have a business model that would help you to recuperate your costs.

I was selling prints from my Pixma Pro9500 13″ x 19″ (A3+/ Super B) printer for five years before I decided it was time to invest in a large-format printer, and it still took me about six months to recuperate my costs through print sales. It can be a Catch-22 situation, as having the ability to create larger prints will generally enable you to make more from larger prints and enable you to recuperate your costs more quickly.

Another thing to consider is that these printers require more time to understand and operate. I don't think I would have liked skipping my earlier 13″ x 19″ printers and moving straight to a large-format printer. Apart from the fact that large-format printers were much more expensive then and not as good either, I really cut my teeth with the 13″ x 19″ printer, and that experience carried through to my large-format printing, making the transition much smoother. If you are just getting started, take your time, and learn how to use something up to a 13″ x 19″ printer first, and then move on when you are more confident in your printing.

GALLERY WRAPS

Printing to Canvas

Both Hahnemühle and Breathing Color create amazing quality canvas for inkjet printing. Both companies also have a range of stretcher bars that you can mix and match according to your image proportions.

My favourite standard sizes are 13" x 19" and 20" x 30". Remember though, you will have to print an extra 1.8" border all around your image, so if you print for a 13" x 19" wrap, your printed image will be a tad smaller than 17" x 23". This means that ideally you'll have a printer that at least takes 17" wide sheet paper or better still rolls of paper, or in this case canvas, if you want to make 13" x 19" gallery wraps. My main printer is a 24" roll paper printer, and this means the largest width gallery wrap I can make is 20".

Other nice sizes are 20" x 26", 20" x 24" and even square at 20" x 20". When cropping my images, I usually try to keep available gallery wrap stretcher bar sizes in mind. For example, the image that we'll use in the following examples was cropped with a 2:1 ratio which means that I could do a super-sized 20" x 40" wrap or, as I did for this example, a 13" x 26" wrap.

Resizing and Gallery Wrap Borders

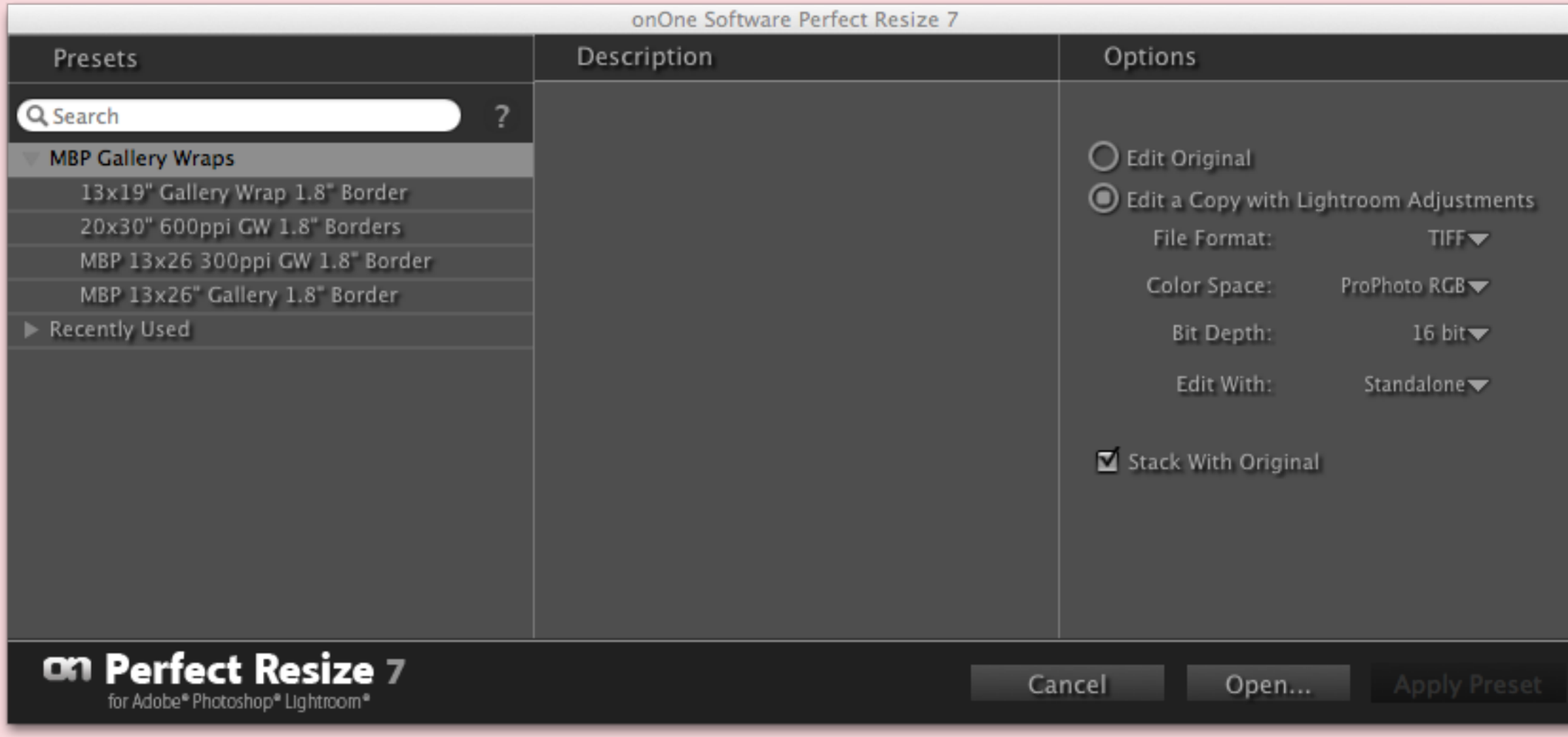
When printing on canvas for gallery wraps, I usually resize my image with onOne's Perfect Resize to the actual dimensions that I will print to. Perfect Resize costs around $100 to buy, but it's worth it if you do more than a few gallery wraps, and regularly upsize your images to make large prints.

You can get Perfect Resize from onOne's Web site at ***ononesoftware.com***. You can try it for 30 days before you buy, and there's a discount code in the Resources section at the end of the book if you decide to invest in a copy.

GALLERY WRAPS

Resizing and Gallery Wrap Borders – continued

Once installed, you can send images to Perfect Resize by selecting **File > Plug-in Extras** in Lightroom, or in Aperture, right-click your image and under **Edit with Plug-in**, select **Perfect Resize**. From Aperture you'll jump into the Standalone Perfect Resize application. If you use Lightroom, once the export dialog appears, you will have the option to open the file in the standalone version or send it to Photoshop. If you want a Photoshop PSD file at the end of the process rather than a TIFF, then select PSD and opt for Photoshop here. The standalone version of Perfect Resize only understands TIFF files. I suggest that you use the ProPhotoRGB colour space and 16 bit for the Bit Depth, as these settings will maintain the most detail in your images as you work on them. If you do want to open the file and stay in Photoshop, another option of course is to just open your image in Photoshop and then start Perfect Resize from the onOne panel. If you go on to do sharpening too, this can work well.

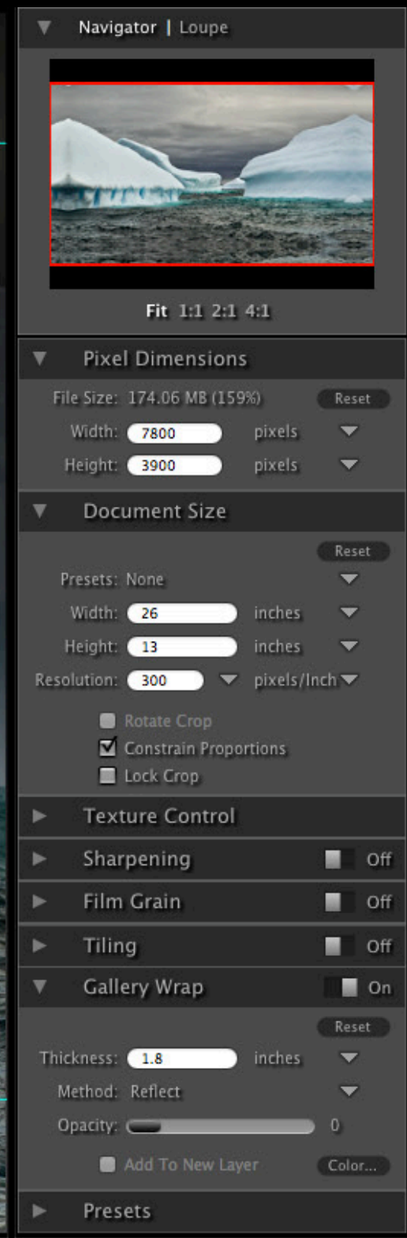


GALLERY WRAPS

Resizing and Gallery Wrap Borders – continued

Once you are in the Perfect Resize dialog box, all you really need to change is the Document Size and Gallery Wrap settings. If you allow Perfect Resize to constrain proportions, you only need to add one of the two sizes in the Document Size panel, and the other will be entered for you. I generally select 300 PPI as the resolution here. You can use 600 PPI or higher to match your printer's highest resolution, but even with the powerful computers we have today, working with 600 PPI files take a lot of time and patience, and the difference in print quality is pretty much unnoticeable at normal viewing distances.

In the Gallery Wrap panel, enter 1.8" or 1.3" for your border size, depending on what size stretcher bars you bought. Breathing Color has both 1.25" and 1.75" stretcher bars available, so you will need to add a border slightly larger than this to create the mirrored image border on each edge that will become the sides of your gallery wrap. You can go a little larger if you prefer, but I use just a small amount, as this makes aligning the printed canvas with the stretcher bars easier, as we'll see shortly. You can see as you make your settings selections, Perfect Resize automatically displays what your image will look like with the Gallery Wrap borders.



GALLERY WRAPS

Resizing and Gallery Wrap Borders – continued

If your image was shot with a 21 megapixel camera and you intend to make a 13x19” gallery wrap, you already have around a 300ppi image without resizing.

In this case you will be fine sharpening for print with the techniques we covered earlier, such as during export to print from Lightroom, Photoshop, or Aperture. If you are going to upsize or increase the resolution of your image, say for a 20” x 30” gallery wrap, then you need to do some slightly more aggressive sharpening. You can do your sharpening right there in the Perfect Resize Sharpening panel at the same time as you prepare your image, but I personally prefer to use Nik Software’s Sharpener Pro for this amount of sharpening. You can reopen the image in Photoshop, and run Nik Software Sharpener Pro from the Filter menu, or you can run it as a round trip from Lightroom or Aperture. If you want to avoid multiple round-trip edits, just open your image in Photoshop to start with, and run the plug-ins consecutively before saving a copy to print your gallery wrap canvas. This is also advisable if you are going to do some soft proof checking as well.

Note that if you don’t want to buy Perfect Resize, it’s not difficult to add these borders in Photoshop by increasing your canvas size by the required amount to create the border, then selecting the edges of your image and transforming them out to each edge, then using context aware fill to fill in the corners. For a nominal fee though, onOne’s Perfect Resize will do all of this for you automatically and is my preferred method.

GALLERY WRAPS

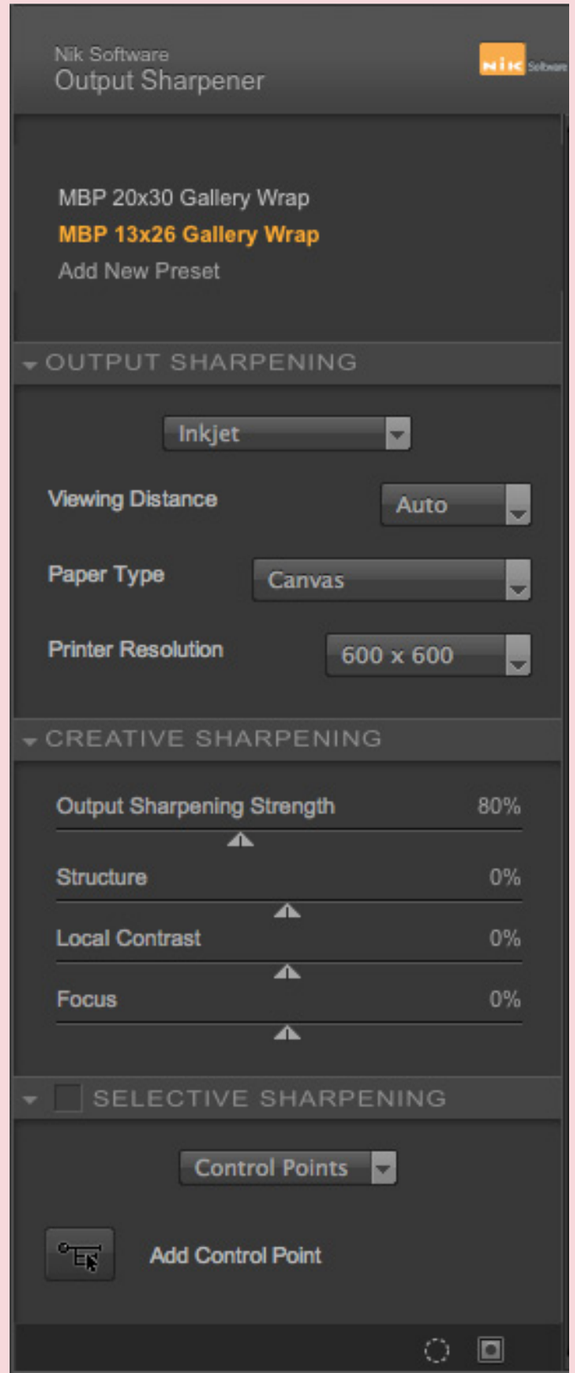
Resizing and Gallery Wrap Borders – continued

If you do use Nik Software's Sharpener Pro Output Sharpener, start it from the Filter menu in Photoshop, or as a round trip from Lightroom or Aperture to the standalone application. Once in Sharpener Pro, select your type of printer—probably inkjet—in the Output Sharpening panel, and then under the Paper Type, select Canvas. Set the Printer Resolution to the maximum resolution of your printer. I generally leave the viewing distance as Auto, but you can play around with this if you prefer, while viewing the affects in the loupe or zooming your image in to 100% to see the effects.

In the Creative Sharpening panel, I generally reduce the effect of the sharpening to around 70%–80%. Output sharpening has to be a little bit harsh, especially when printing to canvas, but I don't like to take it so far that the eventual prints start to look falsely sharpened at a normal viewing distance, which leaving this at 100% can sometimes cause.

With this being a Nik plug-in, you can also make use of their Control Points, to reduce or remove the sharpening from certain areas of your image or areas with similar tonal qualities. Conversely, you can selectively sharpen just certain parts of it if that makes more sense, depending on your image. You might want to reduce the sharpening applied to a face in portraits for example. Or you might want to leave a smooth sky unsharpened. Most of the time though, I apply my output sharpening to the entire image.

If you do apply sharpening like this for larger prints and you print from Lightroom, remember to turn off sharpening before you send the image to the printer, or you'd be sharpening it twice, which could look pretty nasty.



GALLERY WRAPS

Lamination

A couple of things to note about gallery wraps are that you do put the canvas under a bit of stress when you stretch it with the stretcher bars, and without taking any additional measures, the printed surface will crack along the edges. Gallery wraps are also generally hung with no glass or anything to protect them from getting dusty or soiled over time, so after printing your canvas and giving it a day to dry, you really need to laminate it. Breathing Color makes laminates specifically designed for use with their canvases that are very easy to apply with a roller. Some people use a spray gun but with the excellent results I can get with the roller, I personally don't feel it necessary to go to that trouble and expense.

Because you'll have allowed your printed canvas to dry for a day after printing, use a rocket blower or similar to blow off any dust that may have settled on the surface. Also ensure that there is no dust on any tools you'll use, such as a spatula to stir the laminate or the tray for the laminate and roller that you'll use to apply it. Notice that I tape the corners of my canvas print down to stop it from curling or moving while I apply the laminate.

GALLERY WRAPS

Lamination – continued

Then having given the roller a good coating, quickly apply the laminate starting with firm strokes, fully covering the surface in one direction. I usually roll lengthways first then roll up and down across the entire canvas too. Repeat lengthways rolling, and try to get the rolling process finished as quickly as you can. You may have lines in the laminate for the first few rolls, but that will work out quickly as you roll. If you take too long rolling the laminate with Timeless Matte, the white matting agent can start to congeal, so really, try to get the application over quickly.

This method works great with the Breathing Color Timeless Matte laminate and Lyve Canvas for a beautiful subtle matte finish. Please do check Breathing Color's website for additional information though, especially if you are using one of their other laminates.

I also recommend the Breathing Color Timeless Roller. This is a nice big roller, allowing you to cover large prints with fewer strokes, and it is very smooth, making application easy as can be.

GALLERY WRAPS

Lamination – continued

As you finish your quick rolling process, look across the surface of the canvas to ensure that you don't have any dry patches. If you've used full strokes from border to border there shouldn't be any areas you've missed, but it's good practice to check. If you do happen to miss a spot, apply more laminate to the roller and quickly apply another coat to the entire surface. Don't try to just reapply to a small area or you'll end up with an uneven coating.

By the way, don't be alarmed by how white the print looks as you apply the laminate. The matting agent causes this initially, but it becomes totally transparent once dry.

Once the laminate dries (give it a full day) the canvas becomes incredibly durable, and the resulting gallery wrap can be wiped down with a damp cloth if it gets dirty over time. We'll cut away the white borders later, so you can try pushing your fingernail into the laminate or try to crease the canvas, and you'll see just how durable and strong this process makes it.

One last note before we move on to stretching the canvas—if you intend to sign your canvas wraps, do it before you laminate them. The laminate not only helps to lock in your signature, it's more difficult to sign on top of the protective coating if you do this afterwards.

GALLERY WRAPS

Stretching Your Canvas

Stretching your printed canvas over the stretcher bars is a quick and easy process. I'll cover it here with photographs, but there is an instructional video on Breathing Color's website if you need further help.

To get started, you'll need to order an EasyWrappe Trial Kit that includes the corner clamps and adhesive, as well as the stretcher bars to create a 12" x 16" gallery wrap. The trial kit is just $20 and if you use the code MPB20 when you check out, you'll get a $20 discount.

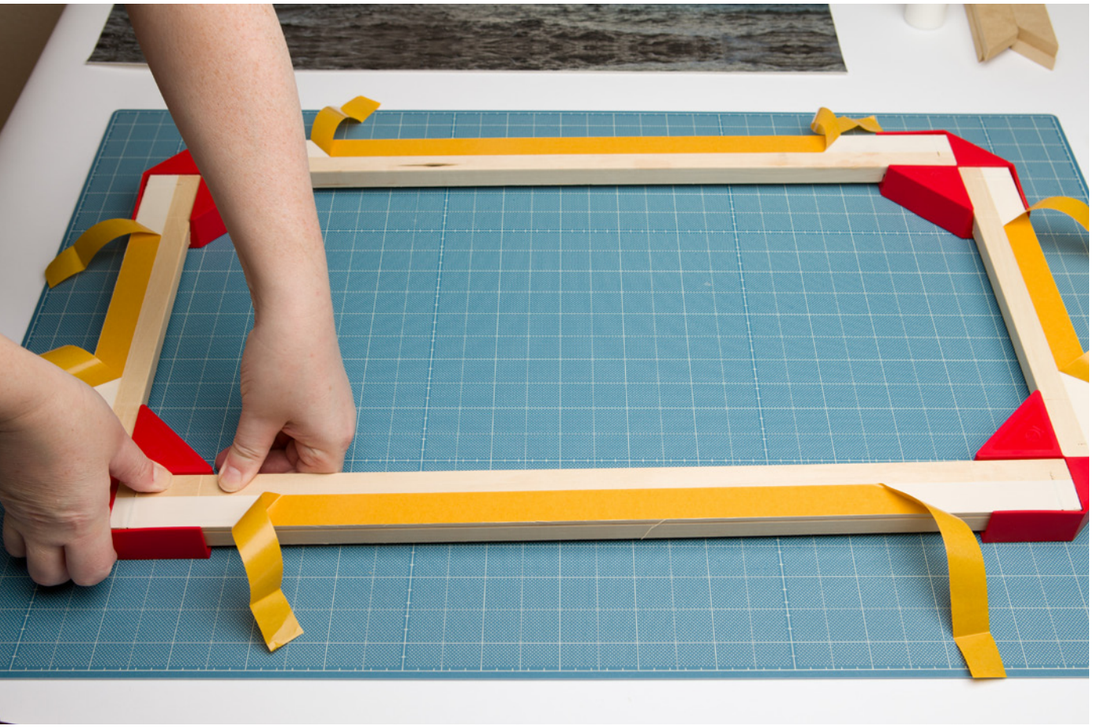
Keep hold of your corner clamps and leftover adhesive, as you'll need these for further gallery wraps that you'll make. You can buy the adhesive separately when you run out, but to get another set of corner clamps, you'd need to order another trial kit. Note that you'll also need to select and buy your choice of canvas and laminate, as well as the Timeless Roller to apply it. Once you are set up with the basics, you can buy the stretcher bars in many sizes to create gallery wraps in many different aspect ratios.

First you need to trim the excess canvas from around your printed area. I use a large trimming mat that I bought from a craft shop for this. Also, ensure that you have a steal rule as an edge for your trimming. Your cutter can ride up a plastic rule, and I've heard stories of people having nasty accidents this way.

GALLERY WRAPS

Stretching Your Canvas – continued

Once you have trimmed the white border away from your printed canvas, put it to one side and then peel away the backing tape on the stretcher bars a little, and push the bars firmly down into the corner clamps.



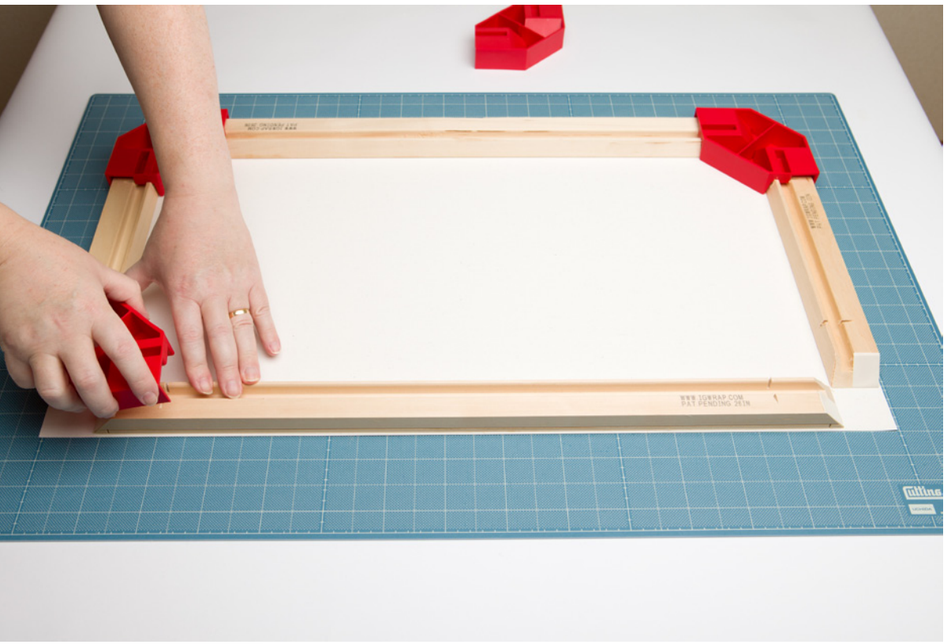
Ensure that your work surface is clean, and place the canvas face down, then lower the frame down onto the back of the canvas. Because you printed the canvas just slightly larger than the stretcher bars, the corner clamps should be perfectly aligned with the edges of your canvas. Having lined the clamps up with the edge, check that you have the same amount of canvas showing on all sides.

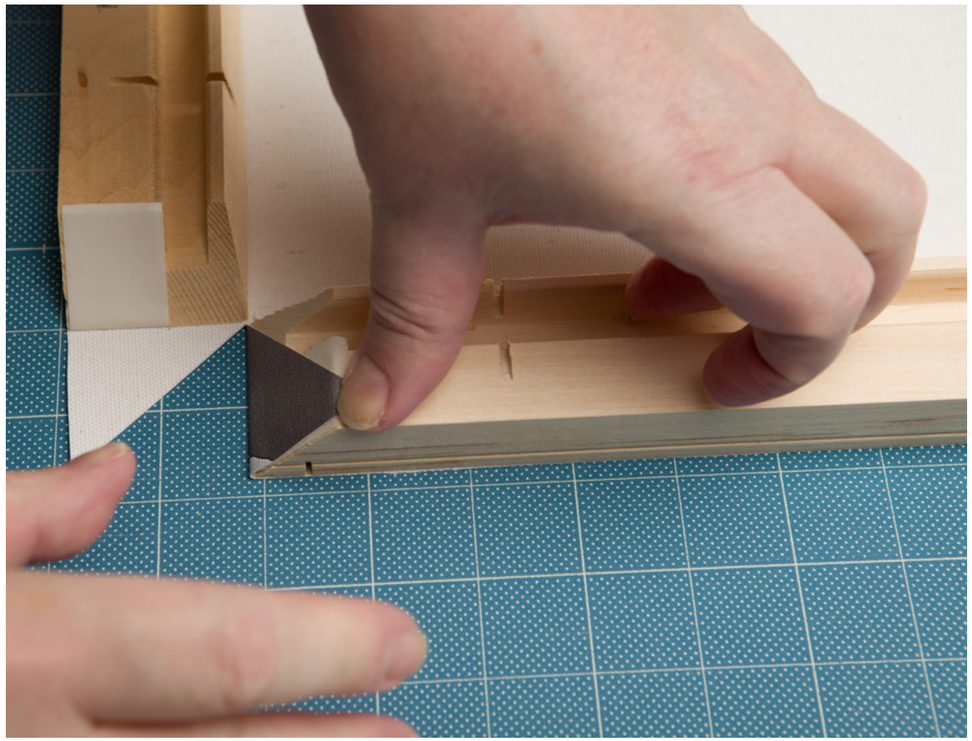
Once you have the frame aligned, pull the facing paper away from the adhesive tape, trying not to move the frame. The idea behind leaving the tape partially on until this point is to stop the stretcher bars from sticking to the canvas too early. If you move the frame as you pull the facing paper away from the tape, you might notice that it will stick to the canvas a little, but just take your time, and realign the bars.

GALLERY WRAPS

Stretching Your Canvas – continued

Once you have the frame aligned, push the stretcher bars out of the corner clamps, so that they make full contact with the back of the canvas. Remove the corner clamps and then push firmly down on the stretcher bars to make sure they are fully adhered to the canvas.





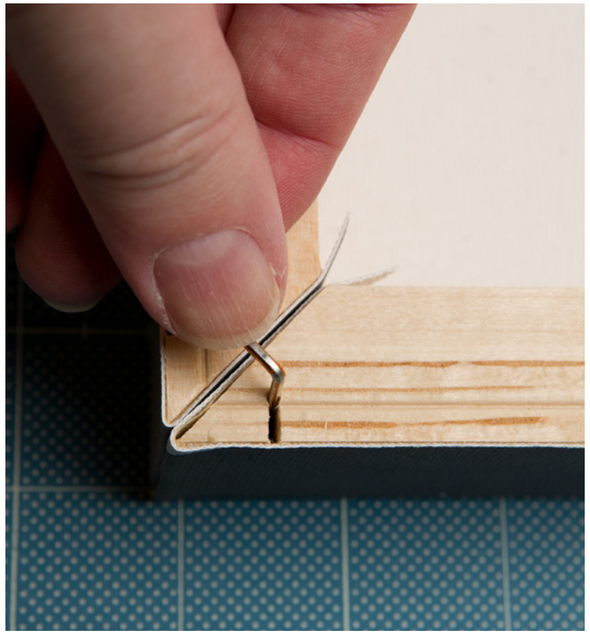
Now we need to trim the excess canvas away from the edges, this time using the wooden frame as your guide. When you get to a corner, cut the canvas angled in slightly, and then make a cut at 45º where the two stretcher bars meet. Be careful here not to cut too deep into the canvas, or your cut will be visible on the face of the canvas. As you cut each of the corners, go ahead and start to fold the canvas flaps up, pulling them tight, and stick them to the adhesive tape.

Once you have all four edges trimmed and all of your corners cut and folded up, run a bead of the adhesive along the edge of the canvas on the inside of the stretcher bars.

GALLERY WRAPS

Stretching Your Canvas – continued

Now, lift the two stretcher bars on either side of a corner, ensuring that the canvas tucks nicely into the corner, and push one of the staples that came with the Trial Kit or additional stretcher bars into the slits cut into the corners. For now just push these in with your thumb. Once you've lifted all four stretcher bars into place and pushed in all four staples, use a hammer to tap the staples fully down until they're flush with the back of the frame.



Depending on how you'll hang your gallery wrap, you might want to buy some small brackets and hanging wire from your local craft store, and there are also brackets that you can screw into the top of the gallery wrap, that latch directly over a hanging hook. I personally prefer wire as it makes getting the gallery wrap straight on the wall easy.

Now put the corner brackets into the grooves along the inside of each stretcher bar, and tap it into place with a hammer.

GALLERY WRAPS

Stretching Your Canvas – continued

The beauty of these gallery wraps is that the artwork is self-contained without the need for additional framing and the corners look great as they fold into themselves.

The process does take some time as you ideally need to allow the print to dry for a day after printing, then after laminating the canvas, you need another day to allow that to dry, so I generally try to create more than one gallery wrap at a time. This also helps you to save on laminate, as the roller sucks up a fair amount, so the more canvases you laminate in one session, the more you save on laminate. I really don't mind the time that these take though, as I really enjoy the process and love the finished product.

GALLERY WRAPS

Stretching Your Canvas – continued

And that's it! You've just created your first professional quality gallery wrap!

Breathing Color has made it very easy for the average photographer to create professional gallery wraps without requiring a lot of work space and expensive specialist tools. I seriously urge you to give this a try.

PRINTING FOR EXHIBITION

Printing for oneself doesn't necessarily require much structure. You can print on many different types of paper and in various sizes depending on what paper you have at hand. You might even print multiple images on one page, just to get a feel for how they look printed. It's totally up to you. When you print for a gallery exhibition though, you may find yourself with a set of conditions or restrictions to work to. When this happens, it helps to create a little structure in your process.

PRINTING FOR EXHIBITION

Printing to Size

When I was preparing for my Nature of Japan show in Tokyo in December 2010 for example, in addition to ten 20" x 30" gallery wraps, I displayed 28 framed prints. To keep costs under control, I decided to print custom sizes to match the frame and mat. The frame was a standard size for 13" x 19" prints, with custom cut mats, but had I printed on 13" x 19" paper, I would have had just a centimetre or so of paper behind the mat, and that doesn't feel like the quality required in a fine art print to me.

For one, I wanted to be able to sign the print, and apply my Japanese stamp (just a way to personalize my prints) even though this would be under the mat for the exhibition pieces. Also, had I printed with just a little excess I would have had to align each print with the mat and make sure they were perfectly straight before applying some archival paper tape to adhere the print to the back of the mat. That means that if someone at some point wanted to remove the print from the frame, they have to cut away the tape, or tear the print off the mat board, damaging it to a degree.

To avoid these pitfalls, what I decided to do was to print on 17" roll paper, resizing my images to 449 x 299 mm. This was 2 mm wider on each side of the printed area than the window in my mats. I then increased the canvas size by 10 cm, creating a white border, which took the outside edge of the print to 2 mm smaller than the frame itself. The 2 mm around the edges was to give my prints room to swell if they sucked up any humidity. If they swell with no room to grow, the print can crumple. Finally, before printing, I added a small grey border that was to guide my trimming of the image to drop into the frames.

The key time saver here was that this allowed me to simply drop these prints into my frames, with just a little room to breathe, and the printed area fell perfectly aligned with the mat window.

There's a video on my blog that walks you through this process, so take a look at that if you are interested: ***http://mbp.ac/271***

PRINTING FOR EXHIBITION

Keep It Clean!

Always keep a pair of white cotton gloves handy for when you handle rolls of fine art paper or when framing prints or handling prints that you are sending to a customer. The oils in your skin can affect how the ink is applied to the paper, and can also discolour the paper after a period of time, and you wouldn't know about this if you've passed the print on to someone else. It might seem like overkill, but this is a good habit to get into.

CONCLUSION

By the time you get to this point, if you've been trying these techniques as you progressed through this eBook, you will be starting to get control over your printing process, without geeking out on the technical. If you've blasted through the book in one session, you now just need to put what you've learned into practice. Come back to this eBook as a reference as often as you need.

It might take a little time to make this stuff your own, but I assure you, as you print more and more, it will become second nature, to the point that even when you do come across a photograph that doesn't want to just drop out of your printer looking amazing, you'll be able to fix it or get it pretty darn close by soft proofing and adjusting it.

Many call the early years of photography the Golden Years, and in many ways they were. But there has never been a better time to be involved in this wonderful pastime, profession, or obsession, as now. We can do so much in the comfort of our own homes now, without getting covered in chemicals either. Ansel Adams would have loved what is available to us now and it's just going to get better and better!

Take your time as you master printing. Take regular deep breaths, and don't let them turn into sighs. Being able to close the photographic loop, from capture to the physical embodiment of your work in a quality fine art print can be a most fulfilling experience. I hope that this book will help you easily make high-quality prints, and to love printing as much as I do.

Martin Bailey
Tokyo, 2011

RESOURCES

ICC Profile Downloads

Breathing Color's profiles are available under the Color Management tab on each paper's page at: ***http://www.breathingcolor.com***

Hahnemühle profiles can be downloaded here: ***http://www.hahnemuehle.com/site/us/468/icc-profiles.html***

Discount Codes:

Breathing Color: ***http://www.breathingcolor.com***
If you decide to buy any Breathing Color products, use the discount code MBP20 for a $20 discount on any order of $20 or more.

Sharpener Pro from Nik Software: ***http://www.niksoftware.com/***
If you buy Output Sharpener or any of the amazing plug-ins that Nik makes, use the code MBP15 for a 15% discount on your orders. This code unfortunately doesn't work in all countries. If it doesn't work, try calling the number in, and they can often apply the discount for you. The only country that I'm aware of where even calling in doesn't work is Japan, ironically.

onOne Software: ***http://www.ononesoftware.com/***
Perfect Resize can be downloaded here. If you decide to buy, use the discount code MBP10, for a 10% discount when you check out.

Still Need Help?

If you get stuck with any of this, feel free to post questions in the Printing section of my Photography Forum at ***www.martinbaileyphotography.com/forum/***. I check the forum regularly and will help as much as I can.

MAKING THE PRINT

Printing Techniques For the Digital Photographer

A MASTERCLASS

by Martin Bailey

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