

Moose's Print Lab

Printing Worksheet

Change the World with YOUR Images!

I want to empower YOUR photography! I want you to be able to communicate visually through your photography with others about the wonders we are so fortunate to enjoy, even more blessed to go out and photograph. You can literally change the world with your images! You've already started the process and probably didn't know it. Just by learning techniques in camera and in the digital darkroom that can finish your image is a giant step forward. How do you take it forward even further? The print!

When you get back home from a shoot, how will you share your photographic experience with your family and friends? Yeah, you could fire up the notebook and carry it around from person to person, but that's not really practical. If you have a digital projector, you could have a slideshow which would be great. The best way though would be to print a portfolio of your work. Prints, besides being a ton of fun to make, are a very personal and effective way to present your visual communications to others. I want to make sure you can go back home and create the perfect prints so what follows are thoughts and recipes for doing just that.

Some of what follows is carved in stone technical stuff. Other stuff are insights of mine from my own printing that I want to pass along. Just like every facet of photography, printing is a very personal venture that has enough variables to make the final print very much yours. Selection in printer, paper and ink are just a few of the variables that can and do change the final output and how you visually communicate. My point, experiment! For example, you can get sample packs of paper from manufacturers; do it, print tests on them and play! Make the print just as much yours as the image itself.

What follows then is kinda just scratches the surface of how I go about printing. What is here is the Printing Worksheet

that went with my 3hr presentation at our DLWS even on printing. So this is kinda of the abridged addition of that presentation, class notes you could call it. I have not gone through and filled in some of the blanks that are here, the biggest is the importance of paper which I cannot stress enough. Also is the demistifying some of the horrible myths in printing. I have also not taken the time to bring this up to date for CS5 which does have a couple different print dialog boxes. Hopefully with time, I will be able to fill in all the blanks and bring this completely up to date. The most up to date information will be on the Moose's Print Lab website. If there is a conflict of information (my apologies in advance), defer to that page as being correct. For right now though, I hope it answers some of your questions about printing.

Let's get to printing.

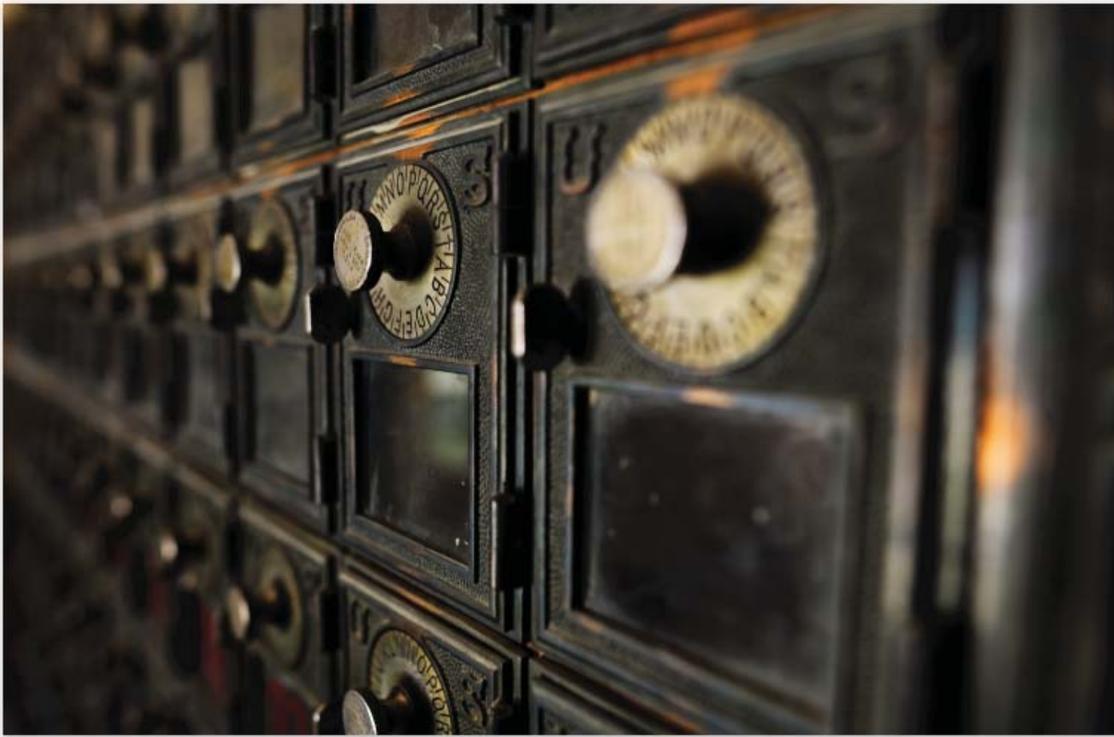


How do we share our images?

There are three ways we can share our images, on a computer monitor, the printed page or prints. Let's take a moment and look at these options.

There are two real obvious problems with sharing images by showing them on a computer monitor. The most obvious is physical. Your desktop computer monitor is rather tied down, literally to a power & video cable. Yeah, you could have everyone sit around your desk, but that doesn't sound like all that much fun. There is your notebook monitor, which isn't physically tied down, but you can only have one maybe two folks looking at your images at a time. Why? It's an LCD, which means that if you're not directly in front of the monitor but off at an angle, you simply won't see correctly. The other reason is it's not a perfect source. Just adjusting the angle of the monitor when we sit in front of it changes what we see.

Now there is the iPad, an amazing tool for sharing our



Obviously the final print is utmost but after that, it's the speed, ease and fun of making the print that has to be taken into consideration when selecting the right printer. Some printers are too easy, some are just downright painful and others are truly plug and play, which isn't the greatest selling point. Hey, if it's work and not fun let's be honest, we won't do it. So don't blow off this very important part of the formula for selecting a printer. You gotta have fun!

Next there is size and price to consider as well. The bigger the printer, the bigger the price tag. The bigger the printer, the bigger the prints that it can produce and again, the bigger the

price tag for paper and ink. Just how big is big enough for your needs? How many 24x30 prints will you produce, compared to say 17x22? When it comes to size don't forget that once printed, you have to find a home, a wall, for that print.

Along with the obvious pluses and minuses of size is the real estate required to make a home for the printer. When I have hand me down printers to give folks, more than once someone has said no thanks because they simply didn't have a place to put the printer.

How about the simple question, do you want to print only color or do you want to get into printing black and white? Where do all these considerations get you when selecting a printer today?

As of the winter of 2010, there is one printer I can highly recommend for your first printer that provides you with the best of all worlds, the Epson 3880. The 3880 can be set up in the same space as an Epson 2880 though it is slightly larger. The 3880 can print out 17x22" prints very quickly while having one of the lowest ink prices per ml of any printer. You can print on nearly any paper made and you can make B&W prints just as easily as color. The 3880 has both MK & PK ink loaded at the same time and when you switch paper from either matte to glossy, the printer automatically changes the black ink with nearly no loss of ink.

The 3880 comes with a full set, not a starter set of ink. That's a \$450 set of ink which when taken into account, makes the 3880 basically the same price as the 2400 when you buy its full set of ink that doesn't come with the printer. With its near instant set up (taking off all the tape does take a moment) and easy software installation, the 3880 is by far the best printer for your money, time, space and photographs!

The whole printing process starts when you click that shutter. It continues in the finishing of your image. And it comes to a fruitful conclusion when you output that image to a printer. You've produced beautiful images. I want to encourage and help you all I can to share your vision so hopefully you can incorporate at least two of these methods of sharing your images into your photographic life.

Thought on Printers

At this point in time, I've probably printed on every printer you can think of, Epson, HP, Canon and some you've probably never heard of. While all of them have their pluses and minuses, which could be debated to the end of time, it's the results though that truly matter. In all honesty, it's the results YOU'RE looking for in your image and print that truly matter.

Finishing the Photo

I can't stress enough that great prints start with, and often end with, the point of capture. When you have to make fixes in exposure and composition in post processing, print quality often suffers. Is the image degradation measurable?

Finishing the Photo

It all depends on just how much fixing of the original had to be done but yeah, it sure can be sometimes. To avoid the possibility and to make the biggest, best print possible, get the image right from the start in the camera. With that in mind, here are the basics in finishing the photo to make it ready for printing.

Let's cover the basics. We start with uploading, editing, priority tagging and filing our images. This is a very important part of the process so we can always find and archive our images for future use and enjoyment. With that done, we select the image we want to work with, copy the Raw file to a folder (I prefer not working with the original) and open our Raw image processor. We process our Raw file with ACR and then open it in Photoshop. In Photoshop we finish our image with techniques we've learned like through the videos on my site or Kelby Training and along with others we've learned. We make sure we use non-destructive, flexible techniques and tools like Layers to finish our image. We do this so if a new tool, technique or hardware comes along, we can quickly and easily make modifications without starting over from scratch. With that all accomplished, we save our file as a PSD and we're ready to take the last steps to finish our image for printing.

Before going any further, you need to make a couple of decisions. You need to decide which printer / paper / ink you're going to use in making your print. This is very important and not to be taken lightly! While I'll talk about my own personal preferences, you need to make your own decisions and then act accordingly. You need to decide if you're printing color or B&W, matte or gloss, fine art or rag paper as these choices are a BIG part of your printing success.

The three main papers I use are Epson's UltraSmooth Fine Art (Epson 7900) or Hot Press Bright (Epson 4900). By far, the USFA is my paper of choice being the paper that all of our Moose Gallery prints are printed on for clients. It is simply a spectacular paper! This is a matte finish paper on a cotton rag base. Read more about papers on Moose's Print Lab page. All of these papers have a lifetime longer than mine. Why is this important to know prior to printing your image?

I hope you've learned to work with a calibrated monitor. No matter how anal we are about profiling our monitor, it doesn't know, nor can it accurately display what the image will look like when it comes out of the printer without some extra input from us. To get us as close as possible to matching monitor to print (which is never perfect), we need to tell Photoshop what paper we're going

to print on. We can do that by turning on a real cool feature few use, Soft Proofing - Soft Proofing View > Proof Set Up > Custom.

Soft Proofing uses the profile for our printer/paper so the monitor can display it. In the Customize Proof Condition dialog box, you're going to select the paper profile for the printer/paper you're going to print on. To do this, you need to know which printer/paper you're going to use. (Note: this is only truly important if you want consistent results. If that doesn't matter, then none of this really matters.)

For discussion sake, we're going to print on the Epson 3880 using Epson ink and UltraSmooth Fine Art paper. To set up Photoshop for Soft Proofing for this combo, we need to tell Photoshop some info. Soft Proofing View > Proof Set Up > Custom, in the dialog box under Proof Conditions for the Device to Simulate, we want to select the paper profile, the exact same profile we're going to select when we print. In this case, the profile is called Pro38 USFAP. We want Rendering Intent set to Relative Colorimetric and Black Point Compensation checked. We then click OK. When we do that, our image's appearance will change on the monitor.

The change might be very subtle or it might be very, very dramatic. Most often, you'll see a change in the blacks and you might see a flattening of the colors. If the change is very subtle, you might have to do nothing to print. If the change is dramatic or you lose important detail in areas of your image that are important to you, then you will have to continue on finishing the image. Your eye might not see the change when you click on OK; your brain might not communicate the nuances that have changed. Not a problem, simply toggle the Soft Proof on and off with Ctrl (Cmd) Y.

You might be asking yourself, "Why not just do all the work on the image in Soft Proof mode?" I've wondered this myself and while I've asked, I've never gotten a direct answer to this question from any of the "printing gurus". But I have an answer that I've found for myself. Let's say you have an Epson 3880 and an Epson 9800 printer in your office. Even though they use the same inks and you are printing on the same





paper, they have different profiles for those papers. If you do all your work thinking you're going to print on the 3880 because you're never going to print bigger than 17X22" and then you want to print on the 9800 because you need a bigger print, you basically have to start all over working the image. That's because you did all your work based on a specific printer and its paper profile. By working your image and then, as one of the last steps, Soft Proof, you have a file that can be printed on any printer with just an extra step rather than reinventing the wheel every time. Does that make sense?

With Soft Proof on, make any changes you feel are necessary. Quite often, a simple adjustment with a Levels or Curves Layer or Saturation is all you need. If this is the case and you're happy with the finished image, I highly recommend if you're going to make a number of prints over time of that file/printer, you do a Save As and add the name of the printer/paper to the file name. It saves a heck of a lot of time the next time you want to print the image. With this all accomplished and the image looking great with Soft Proof on, flatten the file.

It's now time to size and sharpen the file. With a flattened file, we're going to size it. We want to size our image prior to sharpening. I prefer sizing using Photoshop's Image>Image Size Ctrl (Cmd)-Alt(Opt)-I, typing in the appropriate longest measurement (I let PS take care of the other measurement), 360dpi and selecting Bicubic Smoother. That's all I do to size the image for printing.

The Moose Print Lab Sharpening goes into sharpening in greater depth, but here it is in a nutshell. I DO NOT globally sharpen. As you've seen, I might sharpen certain portions of the photo before even getting to this point. It's now time to do the final sharpening before printing. It will be a selective sharpening, to sharpen those elements of the photograph that I want to make sure the mind is sucked into because of its sharpness.

With a flattened file, I make a copy of the image by simply Ctrl (Cmd) J. You'll see a new layer was just created above the Background Layer. With that layer highlighted, I click on Filter > Nik Sharpener Pro 2.0 > Epson Inkjet which brings up the sharpening dialog box. In the first box, we set the basics which are Paper Type and Printer Resolution (the rest of the options

are filled in for us). Paper Type for me will either be Matte (USFA or VFA) or Luster (MSR or PL) and Printer Resolution is 2880x1440. Then we click on Advanced. Here, we can sharpen by COLOR! This gives us even more control over selective focus and sharpening. You simply click the eyedropper on the color you want sharpened and bam, you've got it.

Once you click OK, the layer copy you just created will be sharpened globally based on your selections in Nik Sharpener Pro. We're now going to create a layer mask and fill it at the same time. Holding down the Alt (Opt) key, click on Add Layer Mask which creates a filled mask (no matter the foreground color) on the sharpened layer we just created. With a soft edge brush, 50% opacity, paint in those elements in the photograph you want sharpened. Once you have

everything sharp that YOU want sharpened, I normally flatten the file again. This just makes the file size smaller and the computer work a little faster.

It's at this point you might want to add some of your own personal character to the print in the form of drop shadow, a type of frame (like Laurie demoed) image title and the like. We haven't talked about adding a drop shadow so let's add one now. There are lots of ways of accomplishing the same thing when it comes to adding drop shadows to an image. This is my preferred method because it's fast and accurate. We start with a flattened file. Then, holding down the Alt (Opt) key, double click on the word Background in the layer. This changes the name of the layer to Layer 0. Next we're going to increase the canvas size using a free Automate plugin (Windows only) called Pro Canvas <http://photoshopplugins.thegoan.com/procanvas.html>. You can do the same thing (with a little more thinking) with Image > Canvas Size. With Pro Canvas we can simply add the exact amount to increase the canvas without doing any math. In this case, for prints that will be 13x19 and larger, I add 1 inch on each side of the image and click OK. The reason we changed our image layer name from Background to Layer is so when we did this step, we ended up with a transparent background. It just makes the process a little easier. Like I said, this can be accomplished many different ways, this is just the one I prefer. One reason I went this route is because I have created an action that with one click, takes care of all of these steps for me.

Jumping through the Print Dialog Hoops

What's presented here IS NOT carved in stone. There are other ways, other theories and preferences you can use and still be successful at printing. Just like everything in photography, there are all sorts of thoughts on the process of printing. I'm providing here what I use personally and what I've found works for me. Please feel free to copy all, some or none of what I present. Look at the prints hanging about the room and if the quality you see there works for you, then by all means follow these steps because it's what I do, literally. (Note: Your dialog box might look different, these are all Windows/Epson based

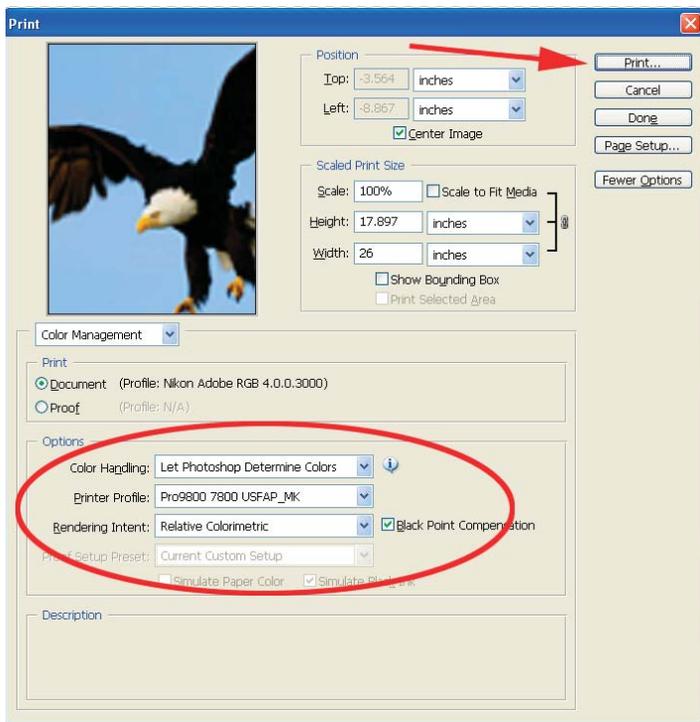
printing dialogs).

Printing with CS2

We want to print using the Print with Preview function of Photoshop Alt(Opt) + Ctl(Cmd)+ P. That brings up the following dialog box.

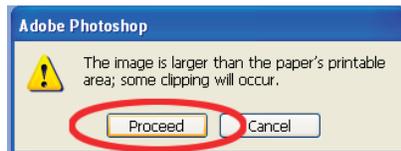
This is where we make our first settings. We want Photoshop to handle our color management, not our printer. So we want to set Color Handling as noted above. We then want to set the Printer Profile to the printer/paper we're going to print on. Finally, you want to set Rendering Intent to either Perceptual or Relative Colorimetric. There are lots of thoughts on which is better; personally, I feel that making a test print using both and then determining which is best for the image you're printing is the way to go. Rarely do I find Perceptual works best for my prints. With those settings made, I click on Print.

Many will do Page Setup before or at this step. Since I can do it in conjunction with the next step and I don't depend on the image preview you see in this dialog box, I found it just goes faster clicking on Print.

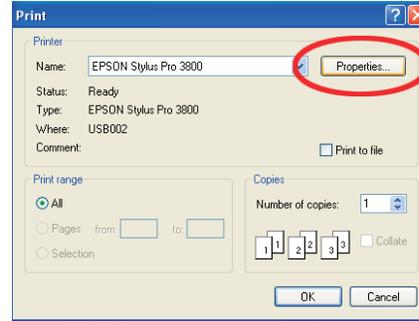


That brings up this next dialog box telling you what I just was talking about. Just click on Proceed and ignore the warning. This brings up the following dialog box, the Print dialog box. We'll see this box again in a moment. Right now, we want to click on Properties to get to the next dialog box. Don't click on OK right now. It can be confusing and many folks click on OK at this step and that causes disaster. So, click on Properties to bring up our next dialog box, the Printer Properties Box, in this case the Epson Stylus 3880 Properties.

This is the important dialog box where we tell the printer what we want it to do and on what. You're going to first, make sure the Media Type is set to the paper you're going to use, in this example, UltraSmooth Fine Art. The drop down menu for Color gives you the option of Color or Advance Black and

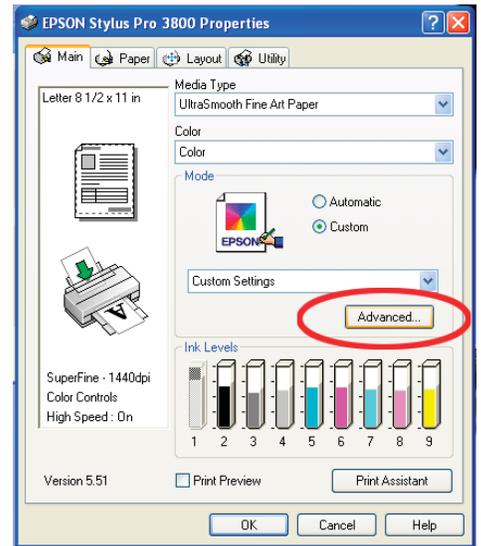


White (if you're using a new Epson printer). We're printing color this time so we want Color present in the selection. Now click on Custom.



Custom permits us to access the Advance button and Advance Dialog which is a very important dialog box. It's where lots of great prints get lost in the dialog shuffle. On a side note, once you've done this and once you've saved your settings in Advance,

rather than clicking on Advance again, you can just click on the Custom Settings drop down menu where you'll find the settings you had previously saved. These settings are saved only for the Main Tab - Advanced settings and do not, repeat do not save the settings you make under the Paper Tab. We're assuming this is your first time through the print dialog so we're going to click on Advance and make some selections.

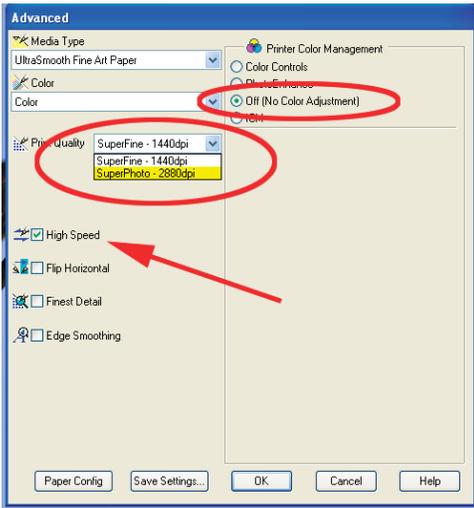


First, make sure the Media Type is still set to the paper you're going to print on. Make sure Color is set to Color. Next comes up one of the first "controversial" selections to make, Print Quality. You normally have two options, SuperFine 1440dpi and SuperPhoto 2880dpi. What's the difference?

The difference between SuperFine and SuperPhoto in most prints smaller than 13x19 is the use of more ink with no appreciable image quality gain. Bigger than 13x19 and the image quality gain is really minimal. With that said, what should you do? Personally, I recommend testing to make up your own mind. All of my prints 13x19 and larger, I print at 2880dpi because I can see an increase in the small detail and it's the small detail that counts. Many say they can't see the detail; they should stick with 1440dpi and save the ink. And that's just fine!

High Speed is checked here because it is OK to use High Speed, especially on prints smaller than 13x19. This is especially true with test prints. On larger prints, I personally turn off High Speed just because. There isn't a huge speed increase and again, with it turned on there is a slight degradation in the small details.

The real, real, real important setting to check here is under Printer Color Management. You only have one right answer here, Off (No Color Adjustment). Not having this checked is the number one reason folks have prints with bad color. We want Photoshop to take care of color management which is why this Off is checked. Another item if selected, ICM, the



printer driver will try to manage the colors at the same time as Photoshop, because of other settings we've checked. This is called Double Color Management and it is not a good thing!

It's after you've done all of this you can save your settings. Click Save Settings

and give your settings a meaningful name that should include paper type. When that is done, you don't have to go into the Advance dialog box again. The setting set you just saved can be accessed in the Custom Settings drop down menu in the main Properties box.

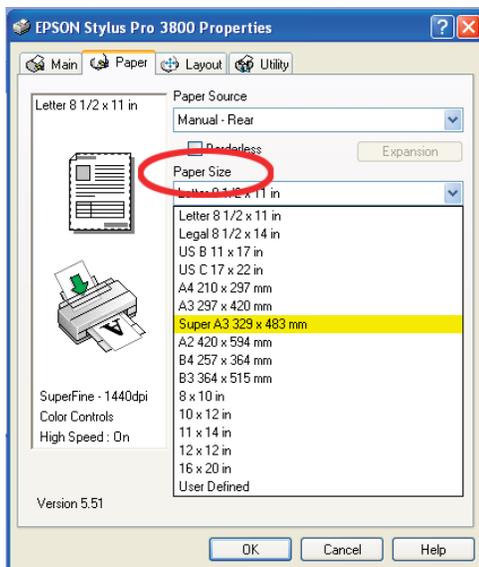
You're going to click OK which closes the Advance dialog box and takes you back to the Properties box. Here you can check to make sure your settings took if you want. In the lower left corner, you will find Print Quality, Color and High Speed listed. I recommend from personal experience to check these settings at every step. Be it pilot error or computer problem, these settings sometimes get messed up. Save yourself some paper, check.

You now want to click on the Paper Tab, next tab to the right of the Main tab. This is where we set the paper settings for the printer. You know if you've not done this if in the Main Tab, at the top it says a paper size other than what you're using and if the orientation in the printer is other than what you're printing.

Paper Source is an important thing to select with Epson printers. For example, when printing 13x19 USFA paper with the 3880, you need to select Manual-Rear. Next, you need to select the Paper Size. I have to admit, this is not very clear cut. For example, 13x19 paper is the Super A3 selection. Printing on 24x30 paper, you have to select User Defined and input the paper size manually, 2400 x 3600 (it's not in inches).

When selected, you'll see it appear on the upper left corner. Next, select Portrait or Landscape and then I always click on Centered. With that, click OK.

This brings us back to our Print dialog box where we can click OK and

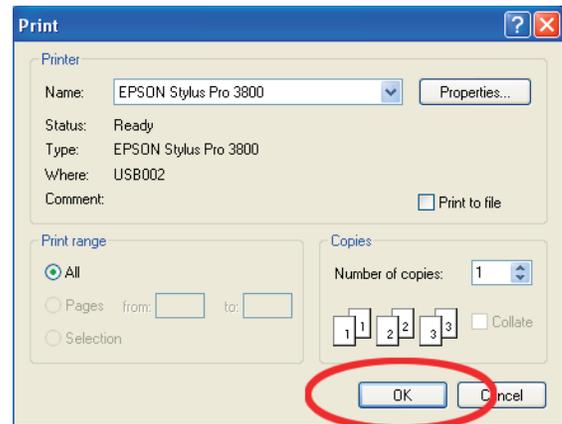


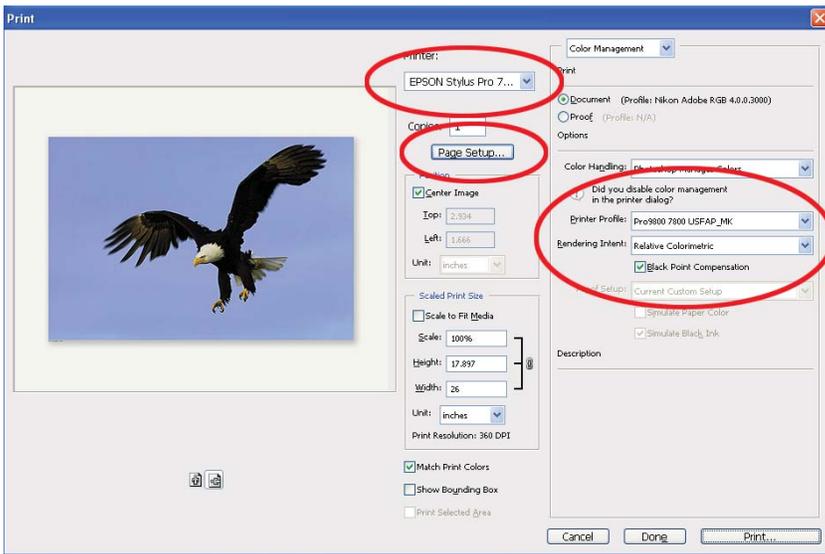
set the printer in motion.

Printing with CS3/4

Printing in CS3 has been streamlined some with there being fewer boxes to negotiate to fire up the printer. Print with Preview is now gone, being incorporated in the general print command that's simply called Print and is accessed with File>Print Ctrl (Cmd) P. This is what you see when you first call up the print feature. This box has a number of settings combined where they were in separate boxes previously.

The first thing to do is select Printer, in this case the Epson 7800 is selected. As you can see, you need to know this because the drop down menu isn't big enough to see 7800. Next, select Printer Profile and Rendering Intent and Black Point Compensation. I've selected UltraSmooth Fine Art, Relative ccc and Black





Advanced dialog. You need to make your selection of Print Quality, SuperFine 1440dpi or SuperPhoto 2880dpi (refer to CS2 printing for brief discussion of the two). It's your option to use High Speed or not. Personally, I don't use High Speed on prints over 13x19" in size. Finest Detail is checked more often than not. There are paper size limitations when Finest Detail cannot be used, like when I print my panos over 40".

The very important option to be checked is in the Printer Color Management box. You must make sure Off (No Color Adjustment) is checked. If your print comes out with an overall green cast, more than likely this was not checked. If your print comes out with an overall magenta cast, more than likely you have a clogged ink jet in the printer. (Note: many of your print problems, color, banding, weak blacks, are issues of the ink jet in the printer that a simple cleaning will fix.)

Point Compensation is checked. You can check Center Image now or in a moment. Once it's checked, it stays checked between printing. With that, click on Page Setup which takes you to another dialog box.

When you click on Page Setup, the Printer Properties box appears. Here, you set the Media Type, in this example it's UltraSmooth Fine Art Paper and White (if working with Epson printers). If you have selected a Media Type that does not support ABW, ABW will be grayed out. You then need to check Custom. With that checked, if you have already created and saved an Advance Setting for a paper, it will appear in the drop down menu. You simply select that saved setting and move forward. If this is your first visit to the dialog or you've not saved past settings, the Advanced dialog box appears where you need to make some very crucial choices that will make or break your print.



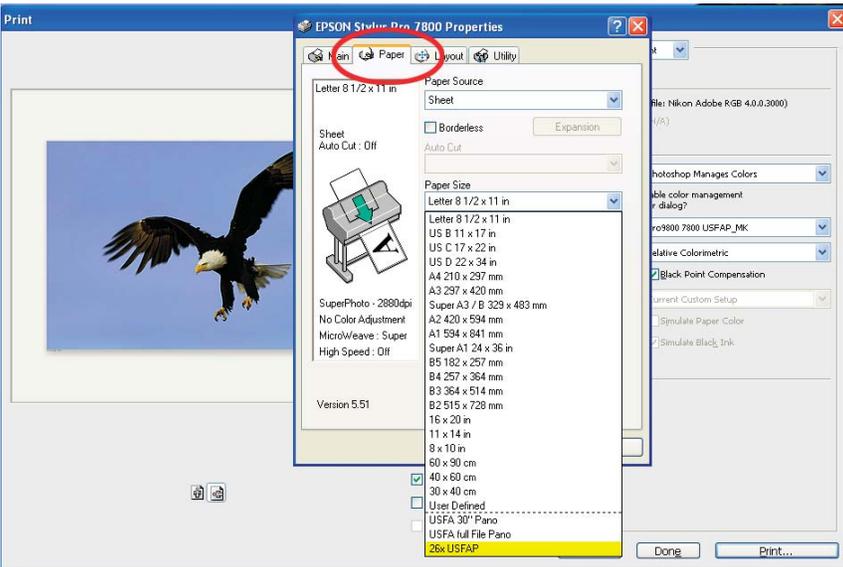
If this is the first time through, you might want to save your settings with a meaningful name that includes the paper name. Don't feel that once you've created a setting you have to always use it, not alter it or even delete it as you learn more and improve on the original setting. Testing is the best way of producing the best print for your image!

Click OK and move on to the Paper Tab. The Paper Tab is where you need to select Paper Source, very important for the Epson printers. You also select Paper Size. As you can see in the example here, I have a number of User Defined sizes saved. They are the ones under the dashed line in the drop down menu. You create these by clicking on User Defined and then entering the measurement in .01 inch so a 24x30" piece of paper would be set up as Width of 2400 and Height of 3600. You then click on Save and give the UD a meaningful name that should include the paper. Then click OK.

With that, the Print dialog box appears where you simply click OK and away goes your printer.



You want to make sure the Media Type selected in the Properties dialog matches what the Media Type is in the



just get you more excited about printing!

Finishing Your Print

We have a couple of suggestions for finishing your print. The first thing is to let your print “dry” for at least an hour after



it comes out of the printer. Is the ink runny, smeary or have problems that you must dry it? NO, not at all. But putting the print flat and just letting it “dry” prevents any possible problems that can rarely appear.

I highly recommend spraying your prints with Premier Art Print Shield. This is a coating that greatly increases the life of your print, preserving its color against UV light. UltraSmooth Fine Art coated with PAPS has a life of more than 150 years! All the gallery prints I send out have been sprayed with PAPS so you can see for yourself that it leaves no visible trace, yet it’s there protecting the prints.

Printing is such a blast and these days, easier than ever to produce beautiful color and black and white prints. There are lots of creative ways to display and share your prints. Head to Light Impressions on the web to see all the different ways you can store and share your prints. Warning, all the options will