## Book Publishing and Color Management
## With Blurb's BookSmart™

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Have you ever shot what you believed were superb photos and wished you could print those beauties into a nicely produced hardbound book, found an online one-off book publisher, built and purchased that book, received it and wondered why the colors were a bit different than what you saw on your color-calibrated monitor?

I found myself in this position after using a number of book-publishing services both personally and professionally now available on the Internet [full disclosure: I do contract work for Blurb]. I think I have tried them all: Apple®, MyPublisher, Snapfish, LuLu™, Sony ImageStation™, and a host of others. All of these products provide the ability to produce a pretty nice photo essay of my photos. Did I mention I shoot Bonsai trees semi-professionally?

Well, I've used all of these services and each time I tore open the packaging to view my "masterpiece" I was mildly disappointed to see what was on paper just wasn't what I saw on my nicely color-calibrated monitor nor what I produced on my home Epson® 2200 color printer. I didn't expect the color reproduction to be the same as my home printer since commercial presses use a significantly different color printing process, but I did expect that things would be "close." Ah, that magic word: "close." But what does "close" mean? Well, it wasn't close enough for me so I decided to do a bit more research to determine whether I could produce something in bound form that matched what I was seeing on my monitor.

My first set of Blurb test books was frankly pretty good. But, I wanted more — better color control — so I did some research to see if I could produce something more color managed than what I saw with all of the other services currently available. What you are about to read is what I discovered and believe can help you to accomplish what I did and get the same response from my customers: "Wow! Those trees look just like they do in my garden. Can I buy a copy of that book?"

I should give you a bit of my background. I started in digital photography in 1993 working for ImageAXS located in Berkeley, CA. ImageAXS was a pioneer in digital image management. We produced digital image management tools for ourselves, Apple®, *Sports Illustrated,* and *National Geographic,* amongst others. I was then hired by Bill Gates at Corbis® Corporation in Seattle, WA, where we went about building an incredible image archive — see www.corbis.com for an idea of what we built. I

continued helping to build various other imaging products for a host of companies: Apple, Adobe®, and others.

Using my book project for Bay Island Bonsai (http://www.bonsaiboon.com/bib/index.htm)as a guinea pig, I wanted to get as close as I could to a perfect book. Color management is very important but it is also very difficult.

For reference, I shoot with a Canon™ 5D and photo process my images with Adobe Photoshop® CS2 using a color-calibrated Windows® XP system built by Dell™ Computer.

### *Improving My Book's Color*

Blurb uses the HP 5000, which is used in a number of commercial book-printing businesses, and an output device I know well. It is a "workhorse" for producing good image quality at a high output rate. The HP 5000 uses a CMYK ICC color profile and I did some research to determine that I could download an appropriate ICC file for soft-proofing my images.

**Tip!** — Find the ICC profile named "HP Indigo Press 5000 Semimatte" and place this in your folder C:\Program Files\Common Files\Adobe\Color\Profiles\. If you don't have access to this profile, I would suggest using the U.S. Web Coated v2 profile as this is a very close approximation to the HP 5000 profile.
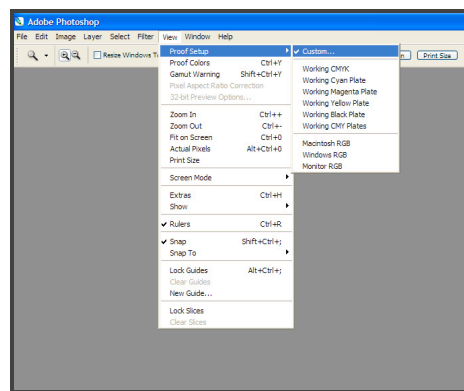


Next, select the ICC color profile for the HP 5000. It is important to note that you should set the Rendering Intent to Perceptual. It isn't important to check the "Black Point Compensation" checkbox, but I do. Next, you might want to check the "Simulate Paper Color" checkbox.
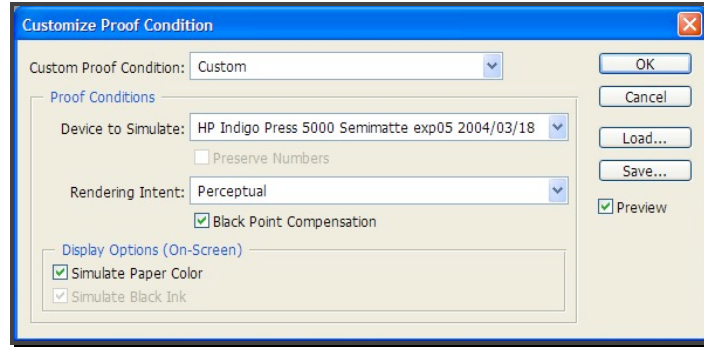
Since I have experience with the paper used in the HP 5000, it is important to note that the ICC color profile I chose indicates *semi-matte*. If you take a close look at the paper Blurb uses, it is a semi-matte stock. Some printers use a gloss stock; however, I prefer the semi-matte because I believe it produces a more realistic color for my purposes.

**Tip!** — Not knowing whether Blurb, or any on-demand printer, protects my images' internal ICC color profile, I moved on to Blurb's Book Preview PDF.

**Tip!** — Each page in the PDF file has merged all of the various layers into a single layer. This layer includes my images, Blurb's background images and backgrounds, etc. The merged image in the PDF was using the sRGB ICC color profile. Well, knowing that the HP 5000 was using a CMYK ICC file, and my Canon 5D was shooting sRGB, there was at least one color table transformation occurring. But I had to ask, "Were there more?"

So I experimented by converting my sRGB images in Photoshop to several other ICC color profiles such as Adobe RGB (1998), Apple RGB, CMYK, etc. I created another book placing these images in pages that I knew would be in my *Book Preview* PDF file.

**Tip!** —I determined that no matter what ICC color profile was embedded in my image, BookSmart converted this into an sRGB IEC61966-2.1 color profile. Does this matter? Yes, you bet it does, and especially if you are not using the sRGB IEC61966-2.1 color profile for your images.

I knew from experience that the color gamut of my monitor was already larger than the color gamut used by the HP 5000 CMYK color profile so that using something other than sRGB as my image source color profile would then cause three color table conversions from my camera to book printing, with results I likely could not anticipate.

**Major Tip!!** — Since BookSmart is converting my images into sRGB before it is printed on the HP 5000, it made sense to make sure that all of my photos should be in sRGB before importing them into Blurb's BookSmart application.

### *My Personal Image Workflow*

The following represents what I have determined to produce the highest quality output for my Bonsai photography books using Blurb.

1. I use the sRGB option available in my Canon 5D camera. If you don't have this option, I strongly suggest using an image editing application like Adobe's Photoshop or Acrobat® Elements to convert it to this color profile.
2. I then edit and color correct all of my photos in Photoshop using the sRGB ICC color profile that is embedded in my image files. Photoshop may prompt you if you don't have this as your default setting in Photoshop. If you aren't sure, in Photoshop, use the Edit/Color Settings menu to check to see what your default settings in this dialog box are and set the working space to sRGB IEC61966-2.1.
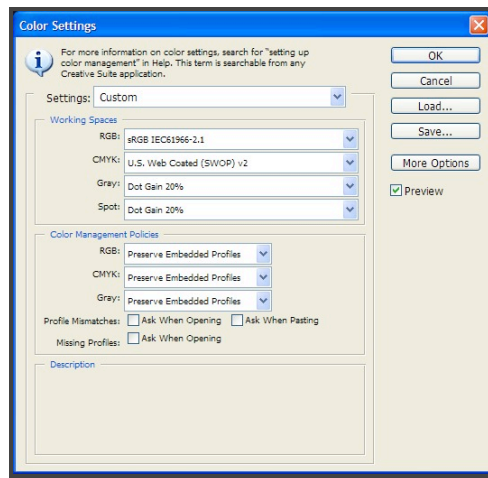


3. After I have carefully cropped and color corrected my photos, I use several settings in Photoshop to soft-proof my image. Remember, we loaded the HP Indigo 5000 ICC color profile earlier. This is the output destination color profile that will be used for printing your book's pages. Under the *View* menu, select the *Proof Colors* option. Photoshop will now display your sRGB image but will substitute the selected output color profile, in our case the HP 5000, to show us a soft-proof of how our image will look when printed on semimatte paper.
4. At this point, you may need to make some additional color corrections to optimize the image for printing. Since color is very subjective, I leave this up to you to determine the best way to accomplish it.
5. I would also strongly suggest using the *View/Gamut Warning* option. This option will display in gray, or another color if you have selected it, those portions of the image that are potentially out of gamut — meaning there is going to be a color transformation since the output color profile cannot perfectly match the color represented in the image's source color profile. Now, this often isn't as bad as it may sound because the color substituted may be very close; however,

there are situations where this creates a color cast that you do not want in your image.

6. After you have done further color correction to insure that the soft-proof matches what you desire, save your image. You are now ready to add this image to your book project.

Certainly all of this adds more work to get your book looking just right; however, from my experience after printing about 180 books at Blurb using this process, it will create a much more pleasing book and one that, for me, is the closest I have been able to produce in matching what my original color corrected image looks like with any book service currently available.

I hope this article will help you achieve what I have been able to achieve by using this workflow. If you find better techniques, I'd love to hear about them and I'm sure there are hundreds of others who would, too.

Lastly, if you haven't seen Bonsai before, the least I can do is show you one now. This is a photo of a tree that that belongs to a member of Bay Island Bonsai.  We owe the beauty of this tree to our consummate teacher, Bonsai Boon. If you have an interest in bonsai follow this link http://www.bonsaiboon.com.



Sierra Juniper approximately 300 years old
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