

Basic Color Management in Digital Photography

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Sound intimidating? Too much trouble? Rocket science? Well, it may seem close to that but guess what -- you don't have to *understand any* of it. Just follow a few simple guidelines to set up some things and forget it. They'll stay set. But each time you upgrade to a new version of the programs you use, you'll need to check them again, because sadly most are not defaults.

First, **Photoshop**. In the Edit menu (along the top of the screen) go to Color Settings. For Working Space you only need to be concerned about the choices in the RGB dropdown. There are only three settings you should consider: sRGB, Adobe RGB and ProPhoto RGB. sRGB is the lowest common denominator. It has the smallest color gamut (range of colors), but if you are shooting in JPEG and your workflow is exclusively web-oriented it is your best (simplest) choice. Adobe RGB is a larger gamut that can now be represented on "wide-gamut" monitors, and it is a better choice if you will be printing images. ProPhoto RGB preserves all the gamut modern DSLRs can capture but it also contains colors that can't be represented on a monitor or a print, and in fact contains colors you can't even see. If you adjust your images into those colors by overdoing saturation, you are not doing yourself any favors. If you are reading this basic article, you really shouldn't be using it.

There are three checkboxes for Profile Mismatches and Missing Profiles. You should absolutely check all three.

Just above the checkboxes are choices for Color Management Policies, and again you only need to be concerned with the RGB choice. Whatever you do, *do not choose Off*. The other two choices are both equally good because the one you choose will simply be the default that comes up when you open an image that is not in the same color gamut as your working space. You will be able to change it in that dialog as appropriate. Depending on the circumstances, you will want to either Preserve the Embedded Profile, or Convert to Working RGB. Both will give you the correct color appearance of the image, *but only Convert to the Working Space will show you a correct histogram*. So if you'll be referring to the histogram (which you should if you are doing tonal alterations) you'll want to choose Convert.

The Conversion Options and Advanced Controls can be left at their defaults.

If your Photoshop working space is not sRGB, whenever you create a JPEG for web posting you need to be sure that you both convert the image to sRGB and embed the profile.

In Photoshop you can do both easily in the dialog for Save for web. (Just check those boxes and it will be done for you.) In earlier versions it is in the File menu. In

Photoshop CC it has been moved to the File > Export menu, where there is also a newer and better (more foolproof) option named Export As, in which some of the legacy items that were in Save for web that you shouldn't bother with are not shown. When using Save for Web, answer No when asked if you want to save the Photoshop file after creating a JPEG, as you don't want to make any changes to the master file.

If you choose to do the steps individually in Photoshop, do *not* use the menu item Assign Profile, which will change the color appearance; use Convert to Profile, which will not change the colors. Do not do your JPEG creation steps on your master file; do it on a copy.

For more information about creating images for the web and viewing them correctly, see these tutorials.

<http://www.dianedmiller.com/00tutorials/How-to-Prepare-Images-for-the-Web.pdf>

and

<http://www.dianedmiller.com/00tutorials/Seeing-colors-correctly-on-the-Web.pdf>

If you use **Lightroom's Develop module** for raw conversion, you need to specify some Preferences. On a Mac they are under the Lightroom menu and on a PC they are under the Edit menu. In the External Editing tab you will need to specify Photoshop (or whatever your desired editor will be, if you use one). Specify the same color space that you use in that editor and 16 bits for the Bit Depth, to insure the smoothest tonal transitions without posterization.

For more information about setting up and using Lightroom, see my tutorials

<http://www.dianedmiller.com/00tutorials/Lightroom-Part-1.pdf>

and

<http://www.dianedmiller.com/00tutorials/Lightroom-Part-2.pdf>

In **Adobe Camera Raw** (the raw converter that comes with Photoshop) open any file and click one of the blue underlined options at the bottom of the screen to bring up the Workflow Options dialog. Set the same Color Space you chose in Photoshop and 16 bits if you are using Adobe RGB or ProPhoto RGB. Then click the dropdown in the Preset box and name it to save it.

Other raw converters should have similar options.

It's really this simple!