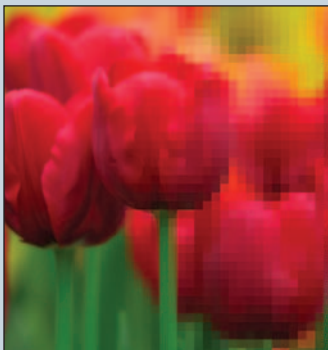


## Working space profiles

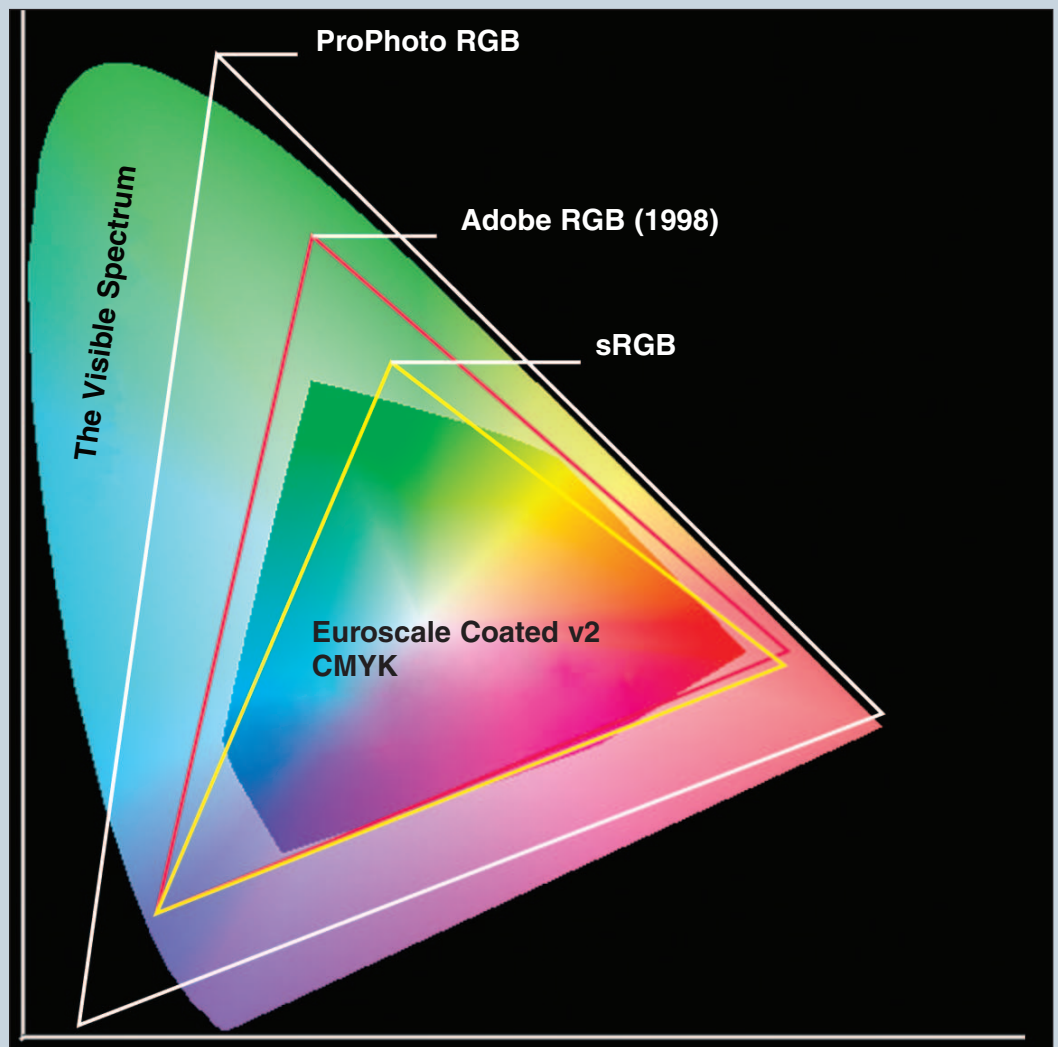
Understanding Colour Management  
(part three)

This month, David Harradine delves into the role of the working space in our colour managed workflow. Here he takes a closer look at the various RGB working spaces available and the pros and cons of each.



Working space profiles differ greatly from scanner, display or printer profiles. Scanner, display or printer profiles are 'device profiles', which means they describe the colour and tonal behaviour of a specific device. Working space profiles are device independent or abstract, which means they describe an ideal, colour space free from the limitations or inadequacies of any given device. There are two key reasons we nominate a working space to perform our image editing rather than simply editing in a device space:

- Most device spaces are not Grey Balanced—which means equal amounts of Red, Green and Blue will not produce a neutral grey as they should.
- Most device spaces are not perceptually uniform—which means that when you create a



neutral tone by eye, it will in fact contain a colour bias.

### The device profile role

All of this makes perfect sense, when you think about what the device profile is doing. A device profile is measuring and reversing a colour imbalance. So if the scanner's behaviour is too magenta, the profile would compensate by being too green. The excess of green in the profile would balance out the excess of magenta in the scanner and neutral would be

neutral (but only for colour produced by the scanner and scanner profile combination). Once we wish to produce a neutral in Photoshop this space will result in an excess of green.

### Choosing a working space

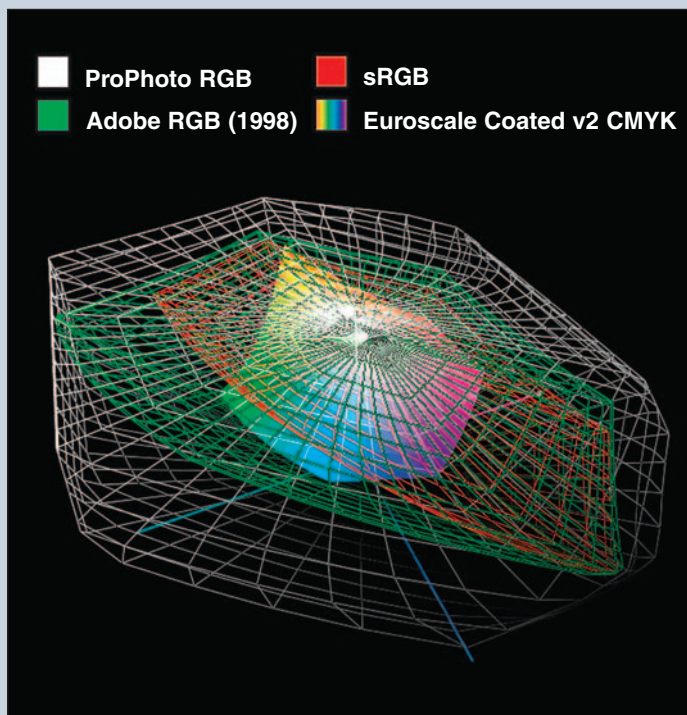
When it comes to choosing a working space, the greatest consideration is size. The working space must be large enough to contain all the colours your input devices can capture, and—most importantly—all the colours your

output devices can reproduce. The three main working spaces I'd like to draw your attention to, in order of smallest to largest are sRGB, Adobe RGB (1998) and ProPhoto RGB—all of which ship with Adobe Photoshop.

### sRGB

sRGB was designed to simulate the average un-calibrated monitor, and therefore is an excellent choice for your web graphics. In fact, most browsers are now being developed to

## Famous last words: 'But it looked right on my monitor.'



assume sRGB in all untagged web graphics. So, to see what your Photoshop images will really look like on the web convert them to sRGB—it's like the CMYK of the web. However these very qualities also make sRGB a less than optimal working space if you ever intend to print anything. sRGB can make life a lot easier if you don't get colour management, as it will look pretty much the same in colour managed and non-colour managed apps alike. However, if you want to get the

best results from your input and output devices you really need a larger working space.

### Adobe RGB

Adobe RGB (1998) is a far better choice for a working space. In fact all the prepress default settings use it. Adobe 98 is more than big enough to contain all the colours of a normal CMYK output, and is really the standard of any colour managed 8 bit workflow. Even if you're only producing web graphics, you would be better

### Graphic representation of the various workspaces in 2D and 3D

Note the parameters of ProPhoto RGB extending beyond the visual gamut, whilst sRGB can't even contain the entire CMYK gamut. Remember it makes sense

to stay in the largest space for the longest time, because of all the editing headroom it affords us. Only when the image is ready to go do we convert to our out space, which ensures we use as much of it as possible.

off using Adobe 98 for your editing and image preparation and then converting to sRGB at the end. This will ensure the most faithful rendition of your original capture online. This is also the optimal workflow for images destined for a non-colour managed application like any of the Microsoft Office programs. Edit in Adobe 98 and convert to sRGB at the end. Also, if you're shooting in 8 bit mode on a digital camera and have the choice of shooting in Adobe 98 or sRGB, you should choose Adobe 98. This will preserve more of the original colour in the scene than sRGB will.

### ProPhoto RGB

ProPhoto RGB—as the name suggests—is an extremely large working space and is recommended for anyone utilising a high bit depth workflow or

outputting to a specialist, wide gamut printing device. ProPhoto RGB contains colours that are outside the visible spectrum so therefore theoretical, but that's just the trade off for how wide it's placed its primaries. Many photographers will choose to archive their images in a space this large and then downsize to Adobe RGB for daily use. This gives them the option of going back to the highest quality master should the image need to be output differently.

However with the new versatility of high bit depth files in Photoshop CS, I think a lot more people will be choosing ProPhoto RGB as their RGB working space.

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