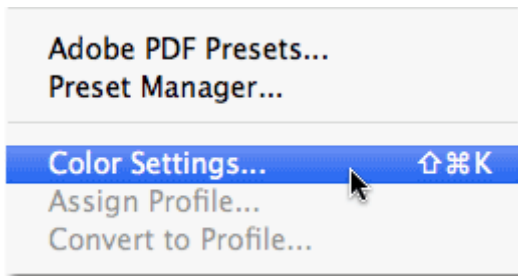


Photoshop Essential Color Settings

If someone told you that you could be making a big mistake just by opening your images in Photoshop, you might expect the next words out of their mouth to be, "That's why you should buy my competing photo editing software instead!". Yet what if they were right? No, not about buying some other image editing program. What if you really are doing something wrong every time you open one of your photos in Photoshop? Sounds crazy? Well, if you're serious about your images but you've been using Photoshop's default color settings for all of your editing work, guess what? Yup... big mistake. In this tutorial, we'll find out why it's a mistake and how to avoid making it ever again.

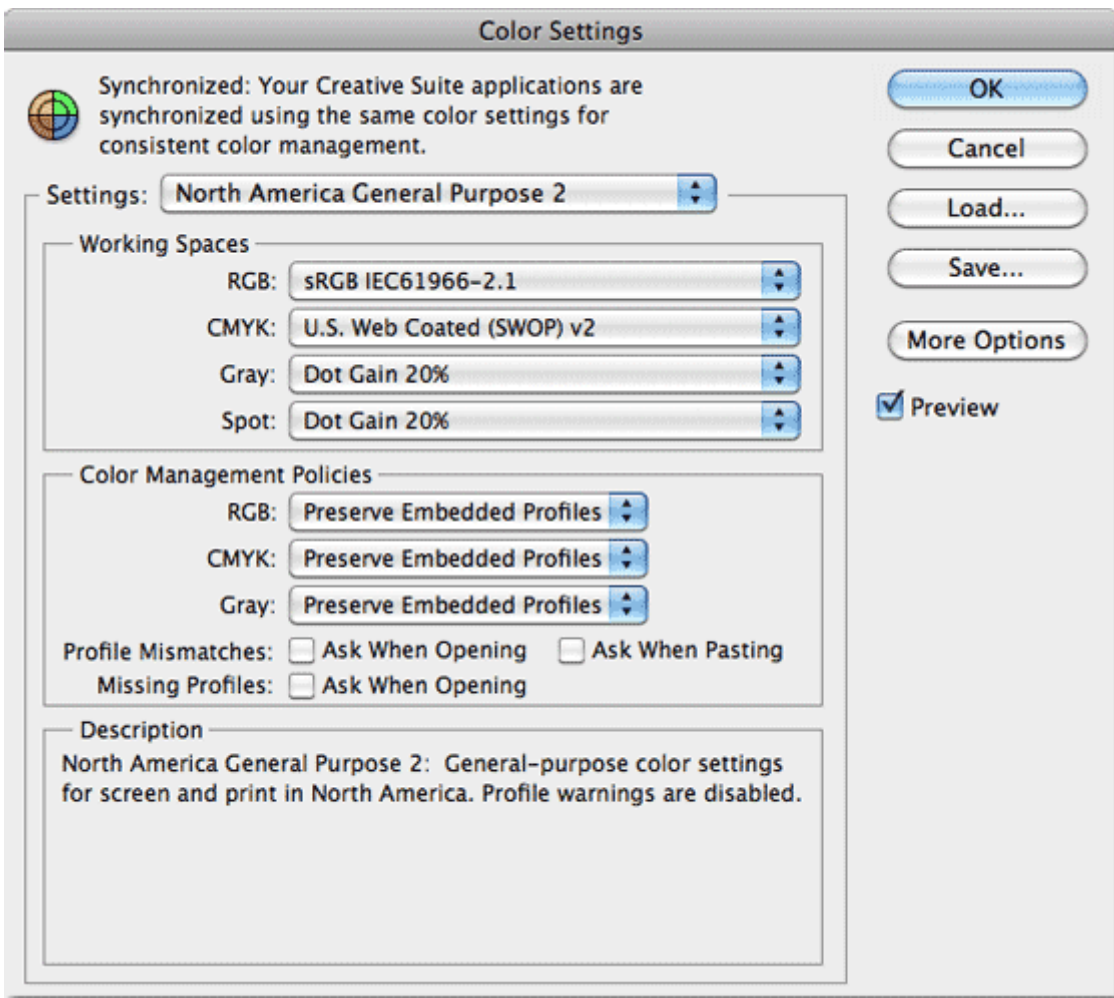
Photoshop's Color Settings

Before we look at why Photoshop's default color settings are a potential hazard, let's see what the default settings actually are. To access them, go up to the **Edit** menu in the Menu Bar along the top of the screen and choose **Color Settings**, or press **Shift+Ctrl+K** (Win) / **Shift+Command+K** (Mac) for the keyboard shortcut:



Go to Edit > Color Settings.

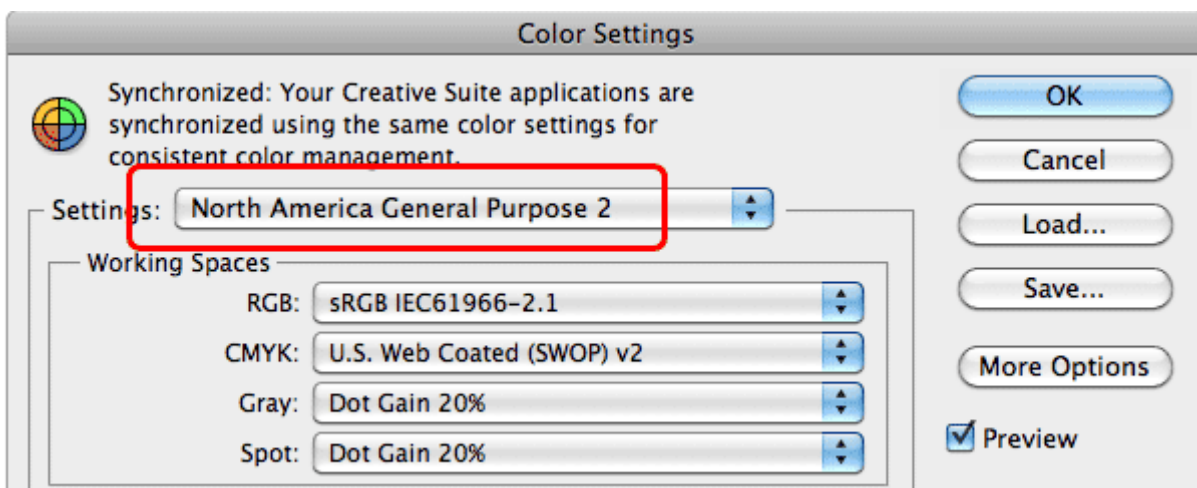
This brings up the Color Settings dialog box. If you've never seen this dialog box before and know nothing about color modes, color spaces or color management, you may be feeling a sudden urge to take a nap. Don't worry, many very thick books and scientific papers have been written on the topics that the Color Settings dialog box deals with, but this is not going to be one of them. We're keeping it simple here because there's really only a few things you need to know to set the color settings up correctly. In fact, there's one setting in particular that can make a world of difference when it comes to the colors you're able to reproduce in your images, which we'll look at in a moment:



Photoshop's Color Settings dialog box.

The All-Important RGB Working Space

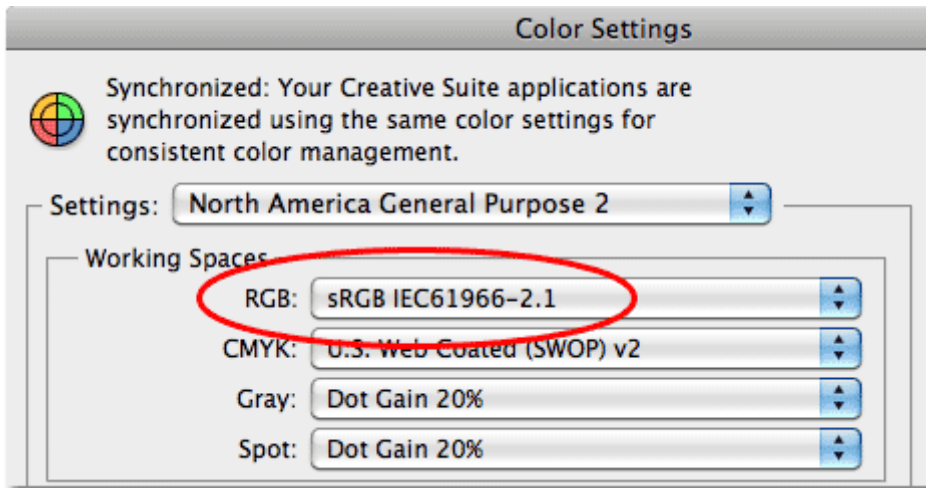
By default, all of the Color Settings options are set to what Adobe calls the **North America General Purpose 2** settings, a group of presets that, as the name implies, Adobe believes will work best for the average user most of the time. If you're in a different part of the world than I am, you may see a different group of presets selected, but it makes no difference because we'll be changing some of them manually:



The North America General Purpose 2 presets are selected by default (in North America, anyway).

Most of the settings that Adobe chooses for us here work fine, but one in particular does not, at least not for

serious photography or image editing, and that's the very first option in the Working Spaces section of the dialog box - **RGB**:



The RGB working space option.

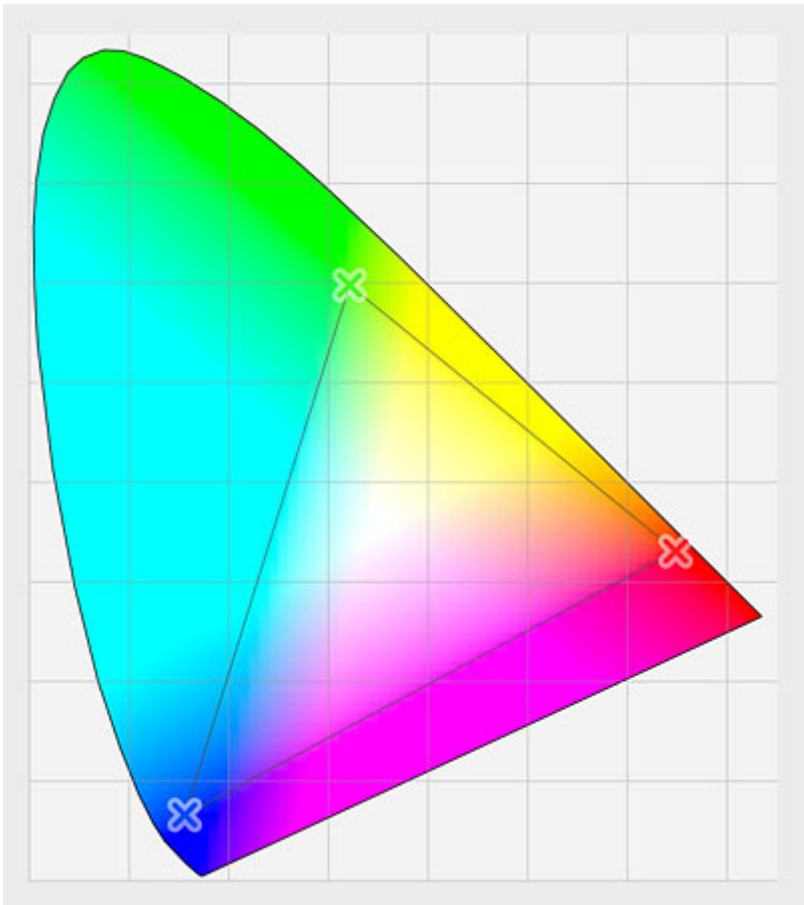
When we view and edit our images in Photoshop, we usually work in the **RGB color mode**, which means that every color we see in the image on screen is made from some combination of red (R), green (G) and blue (B). There are other color modes we can work in, like CMYK (Cyan, Magenta, Yellow, and Black), which is used for printing, and Grayscale, used for images that contain only black, white and shades of gray in between, but the RGB color mode is what we use the most. In fact, if you're a photographer, there's a good chance you'll never use anything else.

The number of colors we can create using different amounts of red, green and blue is practically limitless, but we can't just use any and all possible colors when editing our photos because not all devices can handle the same amount of color. Most printers, for example, can't reproduce all the colors we'd see on a professional quality computer monitor, and some types of printers can reproduce more colors than others. The type of paper you print on also affects the color. This is just the tip of the iceberg when it comes to color management, but one way we try to avoid running into problems is by limiting the range of colors we can work with in Photoshop, and we do that by choosing a **color space**. The color space we end up choosing is known as the **working space**, since it's the color space we're, you know, working with. Each color space gives us a specific range of colors that we can reproduce, with some spaces offering far more colors than others. And herein lies the problem with the default choice.

The sRGB IEC61966-2.1 Color Space

By default, Adobe sets Photoshop's RGB working space to **sRGB IEC61966-2.1**, which I'll refer to by its common name sRGB from this point on so I don't have to keep typing the whole thing. sRGB was created by HP and Microsoft as a general purpose, "bottom of the barrel" standard color space for inexpensive monitors and printers. Basically, it's a color space for the average consumer who knows and cares little about color accuracy or image quality. It's also the standard color space for images on the internet, since most web users out there own one of those inexpensive, average consumer monitors. If you're a web designer who uses Photoshop exclusively for creating images to display on the web, the sRGB color space will do you fine. If you're a photographer who's passionate about your images, though, you'll want to choose a different color space, and here's why.

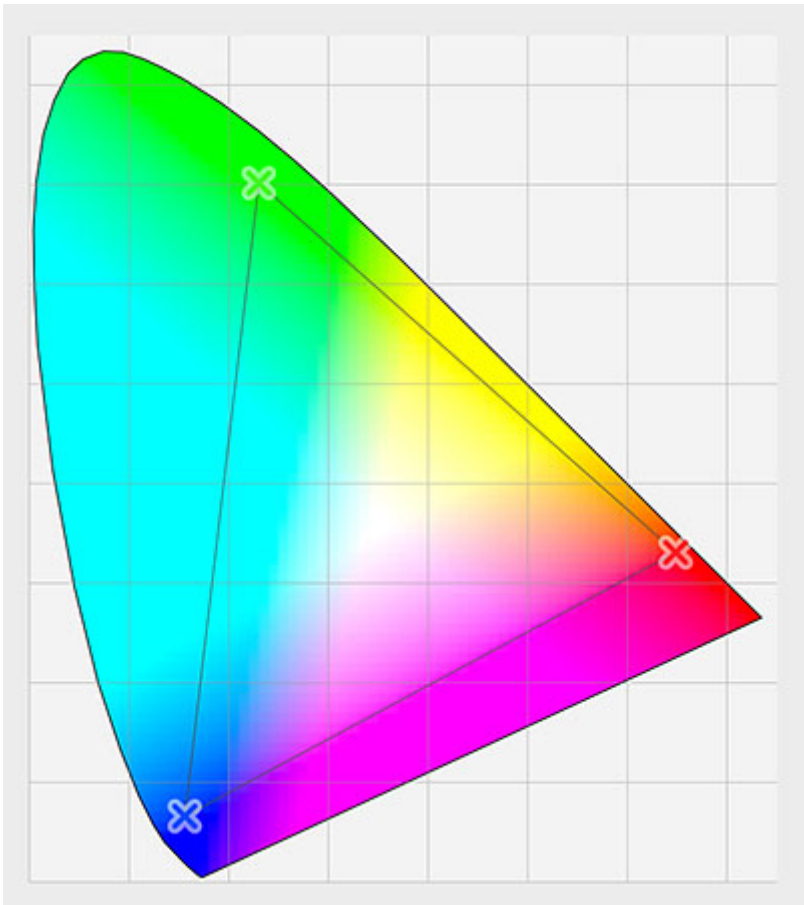
Take a look at this graph, which I created using Apple's ColorSync utility. This graph shows the color range available to us when working in the sRGB color space. The outer, curved area represents all the colors the human eye can see. Inside that large shape is a small triangle. The area inside the triangle represents the colors the sRGB color mode limits us to. None of the colors outside of the triangle are available to us when working in sRGB, which means many deep, rich, saturated colors are off limits. Is this really a limitation you want to place on yourself and your images when viewing and editing them? If you're still reading this, the answer is probably no, but that's exactly what you're doing by using Photoshop's default sRGB color space:



No colors outside the triangle can be reproduced using sRGB.

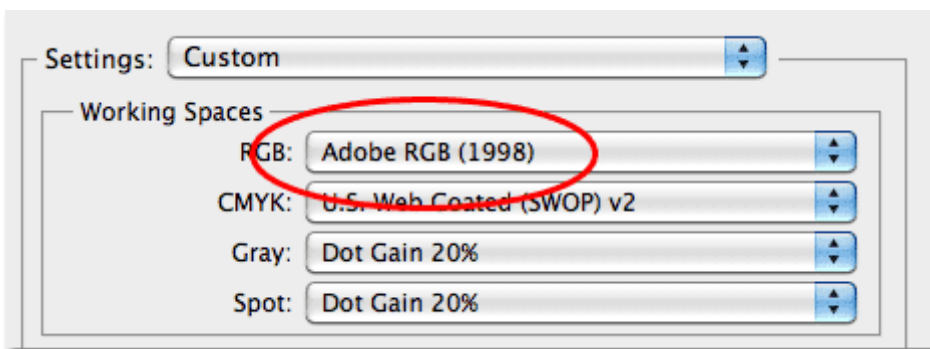
The Better Choice - Adobe RGB (1998)

Let's compare sRGB with another popular color space we can choose instead, **Adobe RGB (1998)**, and no points for guessing which company created it or in what year. Here's the same ColorSync graph showing all the colors our eyes can see, but this time, the triangle represents the Adobe RGB (1998) color range:



The much larger color range of Adobe RGB (1998).

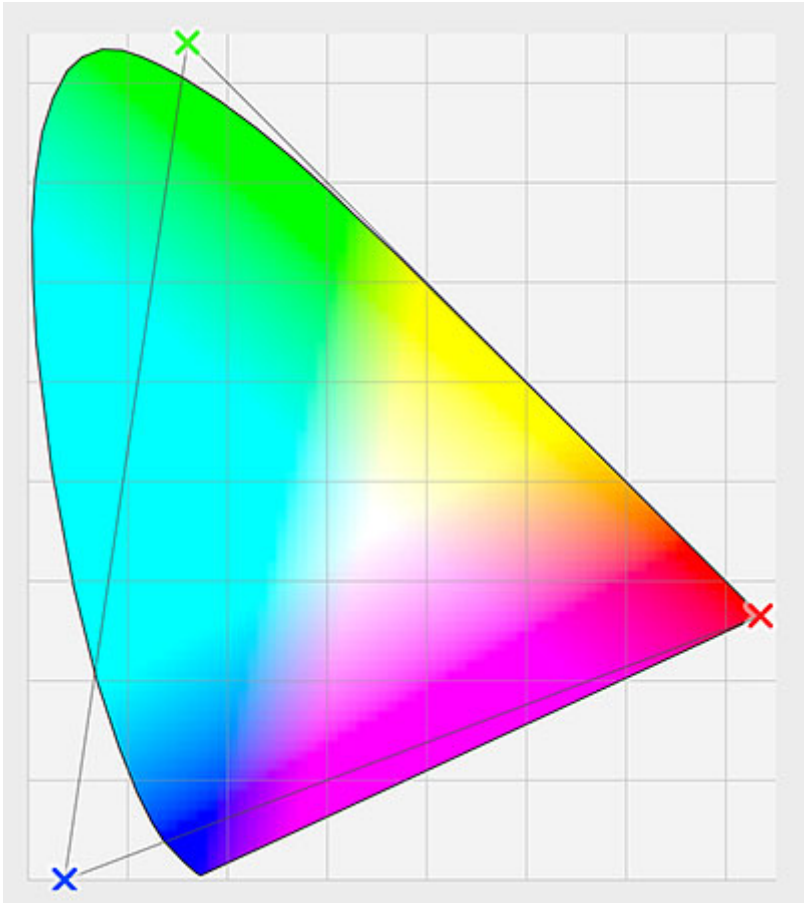
Notice how much larger the area inside the triangle is with Adobe RGB, which means we can view and reproduce far more colors than what the default sRGB color space gives us, and more colors means better looking images, along with more editing headroom. Many higher quality inkjet photo printers are compatible with Adobe RGB, so your prints will also enjoy deeper, more saturated colors. This is the color space used by most professional photographers and photo retouchers, and to start benefitting from all these additional colors right away, all we need to do is change the RGB working space option from sRGB to Adobe RGB (1998):



Click on sRGB and choose Adobe RGB (1998) from the drop-down list.

ProPhoto RGB

Adobe RGB (1998) is a perfectly acceptable, widely supported and highly recommended color space to set as Photoshop's RGB working space, but there's a growing trend (and a whole lot of controversy) among photographers, image editing professionals and color management gurus towards another color space, **ProPhoto RGB**. The reason is that ProPhoto RGB has by far the largest range of colors we can work with, well exceeding the color range of Adobe RGB. Here's the ColorSync graph once again, this time with the triangle representing the available colors in ProPhoto RGB:

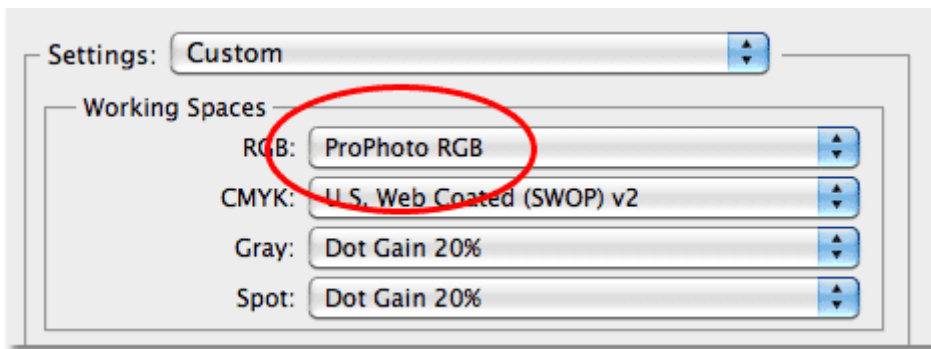


The incredibly large color range of ProPhoto RGB.

ProPhoto RGB's color range is so ridiculously huge that some colors it supports actually fall outside the range of human vision! Virtually every color a digital camera or scanner can capture and every color a printer can print is available to us in ProPhoto RGB. So what's the big controversy? If ProPhoto RGB lets us work with the widest range of colors, why not use it all the time?

ProPhoto RGB's biggest strength, its massive color range, is also the problem, or at least, a potential problem if you don't know what you're doing. Working effectively in ProPhoto RGB involves capturing your images in your camera's raw format (if your camera supports raw), tagging the images with the ProPhoto RGB color profile in Camera Raw (ProPhoto RGB is the native color space of Camera Raw), and opening and editing the images entirely in 16-bit mode in Photoshop, since the color range is so large that editing your images in the more standard 8-bit mode will often cause ugly color banding.

If most of what I just said left your head spinning, stick with the Adobe RGB (1998) color space. It's safe, it's what most professionals use and it gives you more than enough colors to create stunning images. If you shoot your photos in the raw format, understand the difference between 8-bit and 16-bit mode, are intrigued by the idea of working with more colors than your monitor can display or your eyes can see, and want to give ProPhoto RGB a try, simply choose it from the RGB working space's drop-down list. A more detailed discussion of the pros and cons of ProPhoto RGB falls outside the scope of this tutorial, but I encourage you to research it further if you're interested:



Select ProPhoto RGB only if you're comfortable with it, otherwise stick with Adobe RGB (1998).

We've changed our RGB working space, but there are a few more important options we still need to look at in Photoshop's Color Settings, which we'll do next!