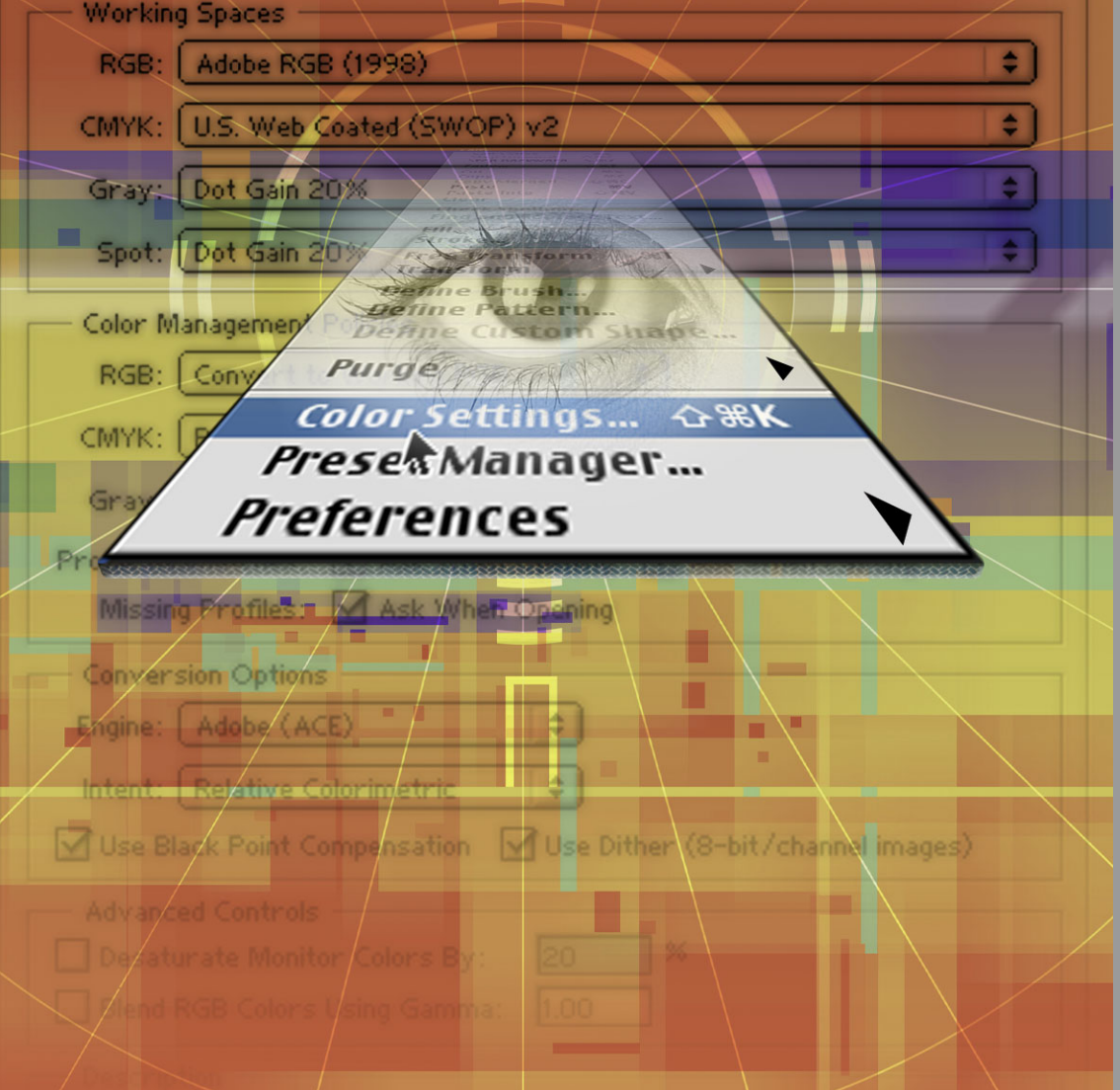


digitalphotography
the complete course

New York Institute of Photography

# Photoshop 10: Color Management

## Unit Five
## Lesson Twenty Four

page size

Quit

click to begin

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## A Color Management Analogy.

A small advertising agency has just finished producing a very successful ad campaign for their biggest client. In fact, it has been so successful; the client would now like to expand the campaign into three foreign markets.

The agency's new assignment:

Replicate the successful ad campaign in Milan, Madrid, and Paris. There's one small problem. No one in the firm speaks Italian, Spanish, or French.

Q. What should they do?

A. Hire a translator who is fluent in all four languages.

By hiring a professional multilingual translator, the agency can be reasonably assured that the message will be delivered accurately and, hopefully, successfully in all three countries.

Just as good communication requires accurate translation, a color-managed digital workflow requires accurate translation too.

Unfortunately, the digital technology explosion has left us with a jumble of disparate hardware and software that, in many cases, is unable to accurately communicate color information between each other.

Intense competition between manufacturers has yielded a significant lack of industry standards causing further divisiveness. The digital professional has come to rely on the Color Management System (CMS) to make sure that every device in the digital chain understands the "language" of the others. With all devices talking the same color language, color printing becomes more consistent and as a result, more predictable.

Let's explore the digital workflow and how a Color Management System can help you to accomplish this formidable task.

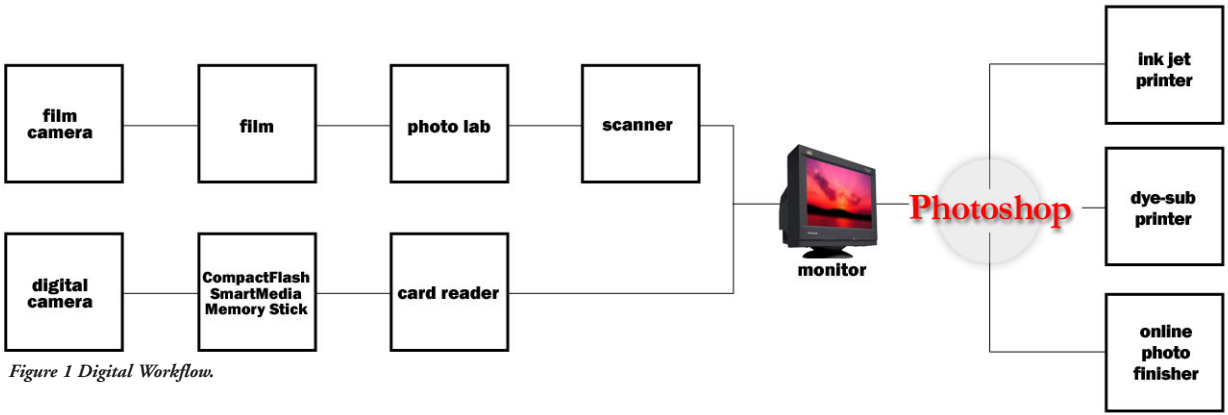



*Figure 1 Digital Workflow.*

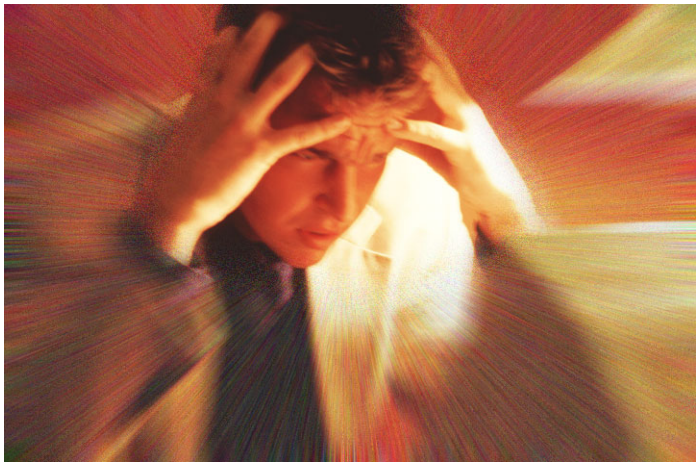
## A Typical Digital Workflow.

A typical digital workflow, for you, might look like this: [SEE FIGURE 1]

You've just taken a great picture with your digital camera, so you start by downloading it to your computer. After the image has been saved to the hard drive, you open it up in Photoshop so you can prepare it (on your computer monitor) for print output at home (on your inkjet printer), and maybe even make a high-quality print (on a dye-sublimation printer) at a local service bureau.

All four devices speak a slightly different language and, without the proper translation between them, may produce unexpected results.

We have all been there. Your image looks great on your camera's LCD and even better on your computer monitor. The problems start when you make your first print; suddenly



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the bright reds turn pink and muddy, the greens have been converted to a "new" shade of brown and everything just looks "wrong". Color inconsistency at the printing stage can be costly on many levels; photo-quality paper and inks are expensive, not to mention your time and frustration.


*Figure 2 A CMS ensures that the appearance of the monitor matches the appearance of the print.*

## Color Management System (CMS).

As we mentioned, a Color Management System (CMS) functions by translating the language of the original image into the language of the specific device. This translation, if done correctly, ensures that the appearance of the original image is maintained on each and every device, despite the inherent language differences. When it comes to photographic output, appearance is everything. [SEE FIGURE 2]

## Color Management Isn't for Everyone.

Before we dive right into Color Management we should explain that there are some image-editing jobs that don't require any color management at all.

### Images Destined for the Web.

If you produce images that are going to be displayed on the Web, color management is unnecessary. That's because you can't control the end users color management settings or, for that matter, what type of monitor they use to view your images. One monitor might display images with a slightly blue cast, while another might exhibit a slightly yellow cast. As we have already learned, even the viewing environment can affect color. [SEE FIGURE 3]

### Some Vendors Prefer to Calibrate Color Themselves.

Many commercial printers and service bureaus prefer to prepare color images for output in-house. If this is the case, color management may not be necessary. Most printers receive graphics from a wide range of sources. By employing

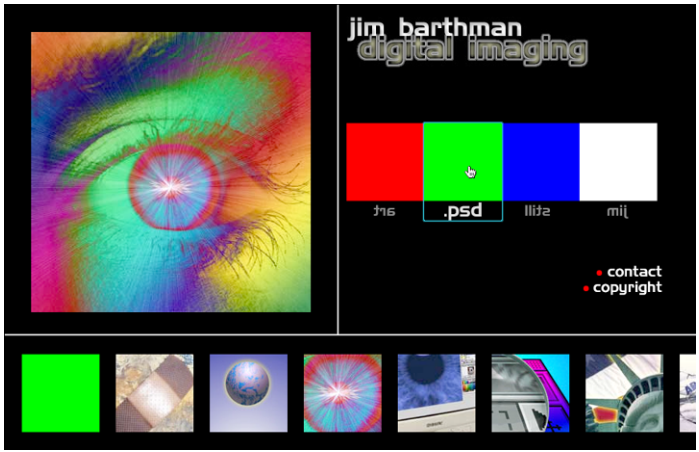


*Figure 3 Webpage Screenshot.*

a full-time graphics department to calibrate and convert color information to meet their specific needs, they help to ensure that the printed output is accurate and efficient.

### Your Current Workflow Is Already Producing Great Output.

If your current set up is working to your satisfaction, you may not need to change any of your color settings. You've all heard the expression, "if it's not broken, don't fix it", never

has this been more true. Adding new variables to a good system can actually cause more trouble than it's worth. That doesn't mean you should skip this Lesson. It's important to understand the inner workings of the process so that if you do run into color problems in the future, you'll be aware of all of the possible causes.

## Who Needs Color Management?

There are lots of reasons why you might need to work in a color-managed environment.

### Working with Others.

Color management can be necessary if you are working with other artists or graphics departments using multiple platforms and devices. This might require that you conform to a common set of workflow standards so that you and all of your workmates will see color the same way. We'll discuss what those workflow standards might be later.

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## Closed Loop.

Most of you probably do not work with large graphics departments or commercial printers. For many, the goal of color management is accurate, consistent color from camera/scanner to monitor to inkjet printer in a closed-loop system. A closed-loop system uses the same equipment (camera, scanner, monitor, and printer) day in and day out. Images are never transferred out of or into the system. In terms of color management, this situation is advantageous because it reduces variables. Consistent, predictable color requires stability every step of the way. [SEE FIGURE 4]

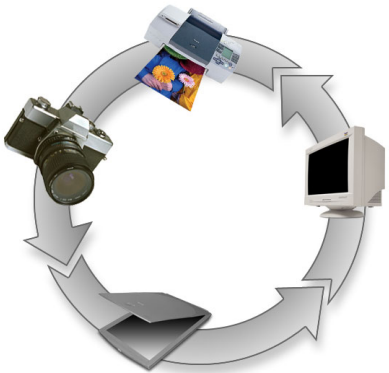


*Figure 4 Closed loop system.*

## Color Management Is Personal.

The reality is that each and every workflow will require color management that is tailored to meet specific needs. There are many different paths to accurate digital color and it is incumbent upon each student to experiment, discover and ultimately choose the paths that satisfy your workflow and vision.

## Color Is a Perception.

It's important to understand how color is created.

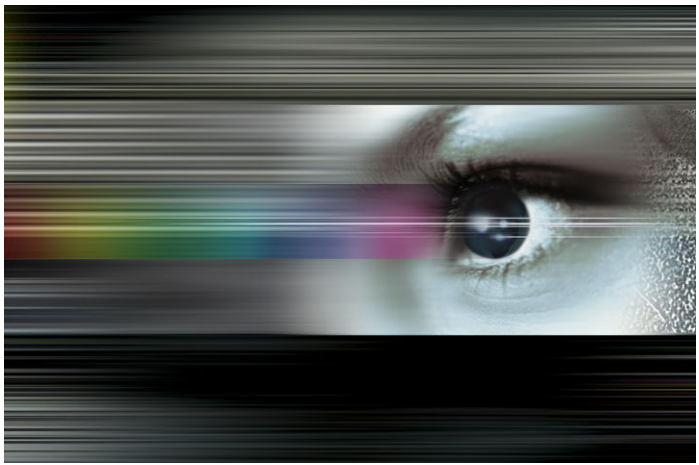
Color requires three fundamental elements to exist.

1. Light.

2. An object that's illuminated by the light.

3. A viewer to perceive the color of the object.

Humans perceive color when light waves are reflected off of objects. These reflected light waves are then gathered by light receptors in the retina of the human eye and processed by the brain. The result is our perception of color. The reality is that we all see color slightly differently.



## Digital Color is Literal.

In a digital photography workflow, color is captured through a camera (or scanner) with a CCD. The color information is converted to digital information via software. This digital information can be displayed as colored pixels on a monitor or as color ink on paper.

Obviously, these are two very different systems. In order for a viewer to accept a digital color print as "real" we must find a way to create accurate color. Once we have found the path to good color, the process must be standardized to ensure consistency.

Admittedly, this is no easy task. But it is possible. To better illustrate the process, we'll start at the core of the digital image, the pixel.

## Color by Numbers.

Digital images are made up of pixels. Each pixel is defined by a numerical value. In the case of an RGB image, three values define each pixel's color; one value for Red, one value for Green, and one value for Blue. Combining the RGB values will produce almost every color in the visible spectrum.

In a perfect world, every digital camera, printer, and scanner would interpret and display color consistently. As we have already learned, each and every digital device has different color capabilities and, as a result, produces (or displays) color differently. These color parameters are defined as the *color space* or *gamut*. [SEE FIGURE 5]

- The human eye can see the widest range of colors
- An RGB monitor can display a narrower range of colors.
- A CMYK printer can display even fewer colors.

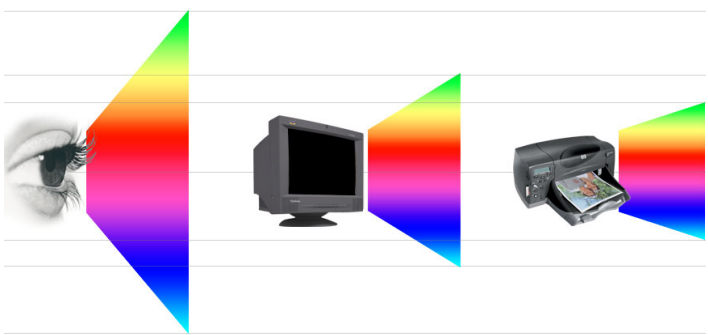


*Figure 5 Different gamuts from different devices.*

Digital image-editing programs such as Photoshop rely on a Color Management System (CMS) to maintain the appearance of an image across multiple devices.

By comparing the color space of the image source (scanner, camera, Photoshop) to the color space of the output device (printer, monitor) a CMS adjusts the color for each device to ensure that the color displays consistently and accurately. [SEE FIGURE 6]

In order for the translator to work, it first needs to know what languages it is translating.

*Important to Remember: Color management is different than color correction. Color management maintains color consistency regardless of the color space of the device on which it is displayed. That means that an image that was never color corrected with an inherent green cast will display the green cast, in all its glory, on every device it passes through.*


*Figure 6*

## Color Profiles.

A *color profile* describes the color space or gamut of the device or the file, essentially describing the language of the device. Profiles are usually associated with devices such as scanners, printers, monitors, and even some digital cameras.

Remember, every digital device has specific color characteristics. A color profile will help a CMS to compensate for these differences and ensure the appearance of the pixel from input through output.

Photoshop's color management workflow uses the standards set by the *ICC (International Color Consortium)*. These ICC standards have become widely accepted by the digital photography and graphics industries.

In order for a CMS to work properly, a *Source profile* and a *Destination profile* are required.

A Source profile describes the color characteristics of the device or application that *creates* the image.

**Source Profiles**
Application
Camera
Scanner

A Destination profile describes the color characteristics of the device that *outputs* the image.

**Destination Profiles**
Monitor
Ink Jet Printer
4-Color Printing Press

Let's look at each one separately.

## Source Profiles.

Source profiles describe the color characteristics of the device or application that creates the digital image. A digital camera, or even a scanner, might be the creator of the image, so that, for example, whenever a scan is produced, a hardware-specific color profile is embedded automatically. The profile's job is to define the color characteristics (language) of the scanner to all of the other devices in the CMS chain.

Some high-end digital cameras and scanners ship with ICC compliant profiles that accurately define the color space of the hardware. Unfortunately, most consumer models do not.

*Check the documentation that came with your equipment regarding automatic profile embedding.*

You can also embed a Source Color Profile into an image from directly within a graphics application such as Photoshop.

## Embed a Common Color Profile In Photoshop.

Rather than attempting to rely on camera/scanner-specific profiles, we suggest embedding a common color profile in every image that enters your Photoshop workflow. By tagging all your images with a common profile, a single "base language" is established, regardless of the source. By maintaining consistent image input into the digital color workflow you increase the chances of yielding consistent, predictable output. Our suggestion is to embed the Adobe RGB profile. That's because AdobeRGB has a large color gamut that is perfect for a variety of imaging projects, from e-mail to printing.

*Color profiles are NOT supported by all file formats. In order to take advantage of embedding profiles, image files must be saved in one of the following formats: .psd, .pdf, .jpg, .pict, or .eps.*

Photoshop provides a variety of ways to embed color profiles into your digital images. In fact, the Color Settings we suggested in Unit Three, were specifically chosen to alert you when there is a profile problem.

## Color Profile Warnings Remind You.

Let's review our Color Setting recommendations to see how Photoshop's Color Profile Warnings can help you to make sure all of your digital images are profiled similarly and consistently.

To see your current color settings, choose **Edit>Color Settings.** [SEE FIGURE 7]

The Color Settings dialog box appears

If you've set up your color settings like we suggested in Unit 3, it will look like this. [SEE FIGURE 8]

Let's review our recommendations.


*Figure 7 Edit>Color Settings.*

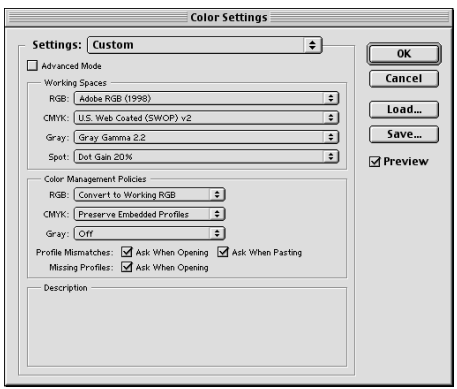



*Figure 8 Color Settings Dialog Box.*

**Choose a Working Space.**

Our first recommendation was to choose Adobe RGB as the working space. The reason for this becomes clear in the next step. [SEE FIGURE 9]

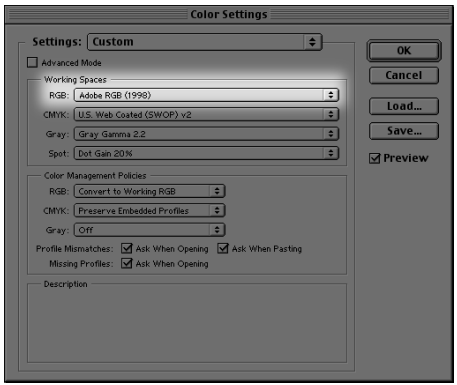



*Figure 9 Adobe RGB in the Color Settings dialog box.*

**Color Warning Configuration "Color Management Policies."**

The next two steps were chosen to ensure that all images opened into your workspace are tagged with a common color profile.

By choosing the **"Convert to Working RGB"** and the **"Ask When Opening or Pasting"** options (found in the "Color Management Policies" section) Photoshop will remind you whenever an image with no Source profile (or a mismatched one) is opened into your workspace. [SEE FIGURE 10]

This reminder comes in the form of a warning dialog box, giving you the ability to convert or add the Adobe RGB profile "on-the-fly."


*Figure 10 Color Management Policies in the Color Settings dialog.*

## Opening Files with Mismatched or Missing Profiles.

With the Color Settings configured as we suggested, you will encounter one of the three following scenarios whenever you open a file from within Photoshop for the first time.

1. If the image has an embedded Source profile that is the same as the working space:

a. The file simply opens.

2. If the image has an embedded Source profile that is different from the working space:

a. The **Embedded Profile Mismatch** dialog box appears, allowing you to convert the image profile to the current working space. [SEE FIGURE 11]

3. If the image has NO embedded Source profile:

a. **Missing Profile** dialog box appears, allowing you to assign a Source profile to the image. By default, your chosen working space will appear as the first choice. [SEE FIGURE 12]

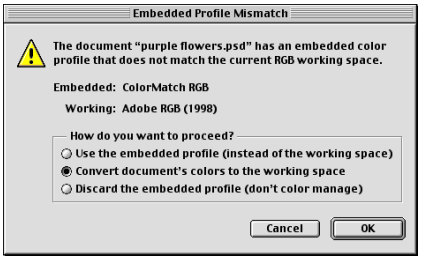



*Figure 11 Embedded Profile Mismatch dialog box.*

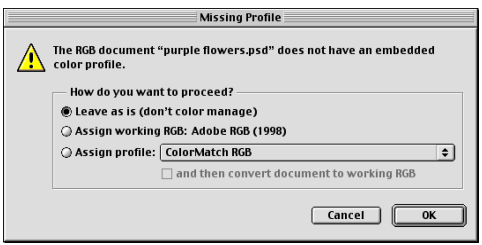



*Figure 12 Missing Profile dialog box.*

## Pasting Information Between Images with Mismatched Profiles.

When you paste file contents from one image into one with a dissimilar profile, you will also encounter a warning. In this case, the **Paste Profile Mismatch** dialog box will appear.

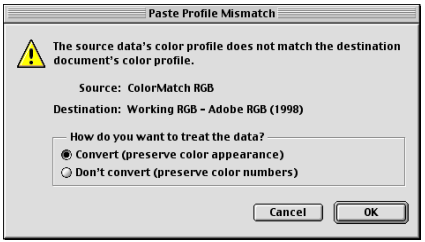



*Figure 13 The Paste Profile Mismatch dialog box.*

The **Paste Profile Mismatch** dialog box reveals two options:

**Preserve Color Appearance** or **Preserve Color Numbers**.

If you choose **Preserve Color Appearance**, the numerical data that defines the color of the image is changed but the color is preserved visually. [SEE FIGURE 13]

If you choose **Preserve Color Numbers**, the numerical data that defines the color of the image is maintained, resulting in the possibility of a color shift.

For most photographers numerical data takes a backseat to appearance. Why, then, would you ever consider choosing the Preserve Numerical Values option? While most simple color management workflows are able to rely on visual feedback alone, oftentimes more complicated workflows require that the numerical data be maintained to ensure accurate reproduction. Remember; every workflow is different and the power of Photoshop lies in its ability to accommodate varied situations across multiple industries and platforms.

## Embedding Source Profiles Manually.

### Assign a Source Profile.

If you open an image in Photoshop and it doesn't have an embedded profile, you can embed one easily with the menu command: **Image>Mode>Assign Profile**. [SEE FIGURE 14]

The Assign Profile dialog box appears.

Click on the drop down menu to locate and select a profile. [SEE FIGURE 15]

Click **OK** to assign the selected profile.

The image has the new profile embedded.

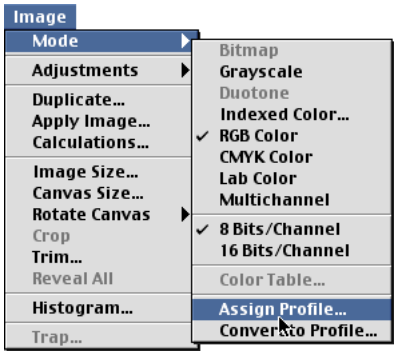



*Figure 14 Image>Mode>Assign Profile.*

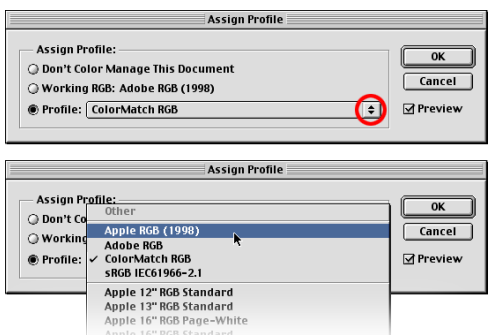



*Figure 15 Assign Profile dialog and Selecting a profile.*

## Convert a Source Profile.

If you open an image in Photoshop and it has an embedded profile that doesn't synchronize with your workflow you can convert it easily with a menu command.

Choose **Image>Mode>Convert Profile.** [SEE FIGURE 16]

The Convert Profile dialog box appears.

Click on the drop down menu to locate and select a profile. [SEE FIGURE 17]

Click **OK** to convert the image profile to the one you've chosen.

The image has the new profile embedded.

*A quick note: If an image does NOT have a color profile embedded (and you choose not to embed one) it will display in your current color working space. Once it leaves your workspace, it's on its own. Without a color profile to describe its source, the chances of predictable output are reduced.*

As we mentioned earlier, not all file formats support color profiles.

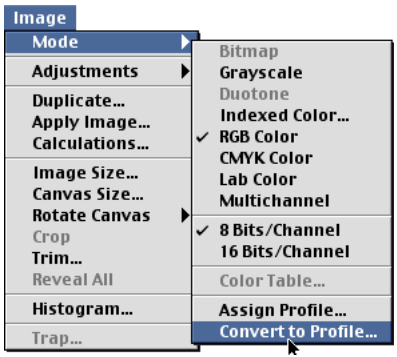



*Figure 16 Image>Mode>Convert Profile.*

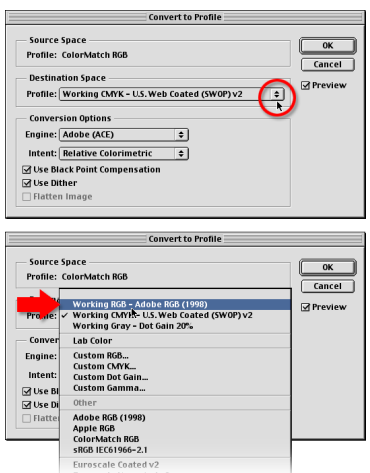



*Figure 17 Convert Profile dialog box and dropdown menu.*

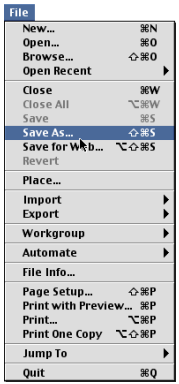



*Figure 18 File>Save As.*

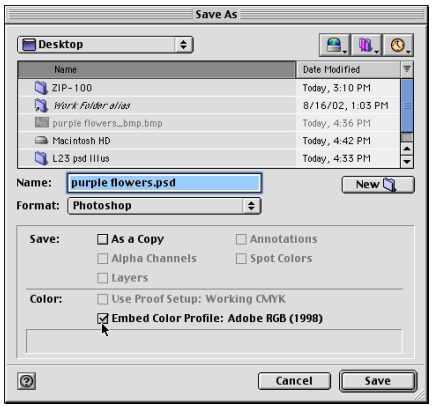



*Figure 19 Save As dialog box.*

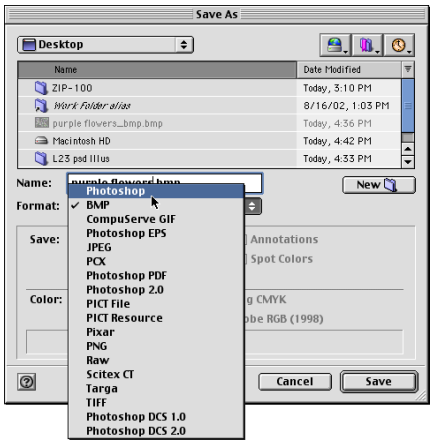



*Figure 20 Save As dialog box and Format drop down menu.*

## Embedding Source Profiles When Saving.

Photoshop gives you the option to embed a profile in an image when saving it in one of the following formats: .psd, .tif, .pdf, .jpg, .pict, or .eps.

This is a great feature when you are saving multiple copies of the same file with different embedded profiles.

Choose **File>Save As.** [SEE FIGURE 18]

The **Save As** dialog box appears. [SEE FIGURE 19]

Name the file by clicking once in the File name field and then typing a unique name.

Click the **Format** drop down menu to select a profile-friendly file format such as Photoshop (.psd). [SEE FIGURE 20]

In the **Color** section of the **Save As** dialog box, you can choose to select the working space as your embedded profile.

In this case, the working space is Adobe RGB.

Choosing the ICC Color Profile option will automatically embed the Adobe RGB color profile in the newly saved file. [SEE FIGURE 21]

Click **OK**.

The profile is embedded in the new copy.

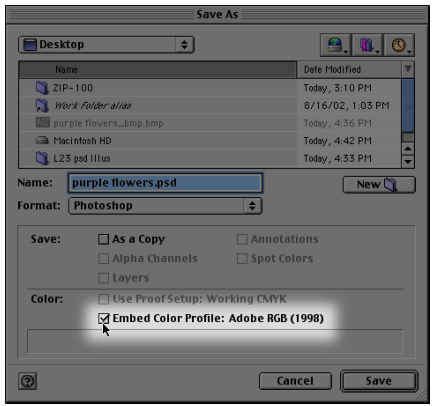



*Figure 21*

## Destination Profiles.

While the Source profile describes the color characteristics of the creation device, the Destination profile describes the color characteristics of the output device, such as a monitor or a desktop printer.

## Create a Monitor Profile.

Your monitor requires a Destination profile in order for it to display color consistently and accurately. Creating a color profile for your monitor is fairly simple. In fact, whenever you calibrate your monitor, with a utility program like Adobe Gamma, you are actually creating a Destination profile. [SEE FIGURE 22]

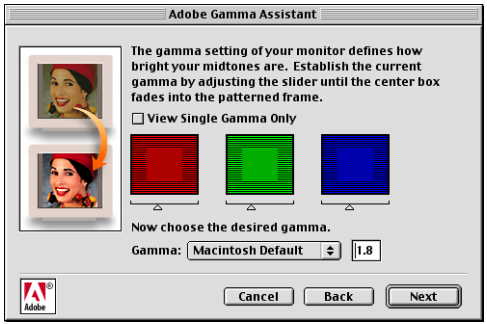



*Figure 22 Adobe Gamma.*

## Adobe Gamma Calibration.

1. Neutralizes the monitor to remove any color casts.

2. Generates an ICC profile that describes how your monitor displays color in your working environment.

As we have already covered, Adobe Gamma is a good starter tool. But when your color decisions become more complicated, you may want to invest in one of the many affordable third-party calibration solutions available.

**Colorimeter Calibration.**

There are a host of companies providing monitor calibration products. Most of these packages utilize precise apparatuses known as colorimeters or spectrophotometers. These instruments are designed to capture the colored light produced by a computer monitor. Proprietary software processes the color information and adjusts the monitor to produce clean and consistent color while simultaneously generating a color profile. [SEE FIGURE 23]

A hardware and software solution such as this almost always guarantees a consistent and unbiased delivery of color due to its mechanical nature.

Adobe Gamma is great, but it relies on human judgement and, as we all know, to err is human.


*Figure 23 One example of a colorimeter.*

## Why Is Monitor Calibration So Important?

In the course of a digital workflow your images spend a good deal of time on the monitor.

- Viewing, visual editing
- Photoshop
- Image prep, re-sizing, cropping
- Retouching
- Color correction

Without a properly color-calibrated monitor, you won't know if the color you're looking at is correct or drastically wrong. In this scenario, color correction is futile.

Regardless of the calibration tool you choose, use only one at a time. That means if you decide to use a third-party solution, uninstall Adobe Gamma first to eliminate the possibility of calibrating twice.

Calibrate your monitor often, as they do change over time. Set a schedule to do this often-forgotten yet important task.

## Profiling Your Printer.

One of the last pieces in the color management puzzle is the Destination profile for the printer. Because the printer occupies the unenviable final step in the process, its output is most often scrutinized and criticized.

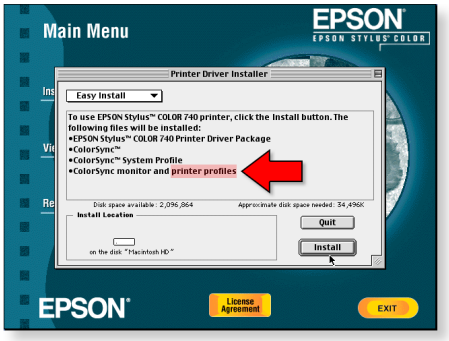
Fortunately, most photo-quality inkjet printers ship with ICC profiles that help to characterize the color language of its specific printed output. Just like all hardware in the digital workflow, printers have their own color peculiarities.

The first thing you need to do when you buy a new printer is to install the printer driver. The printer driver allows your computer to talk to the new device.

Printers that have Destination profiles for the printer are usually copied to the proper directories on your computer at the same time.

Many printers, like this Epson inkjet, have more than one profile. In this case, each profile is optimized for printing on a specific medium. That's because the type of medium used can actually affect how ink is absorbed and consequently how color is displayed. [SEE FIGURE 24]

Now that we know what the language of our original image (Source profile) and the language of our output devices (Destination profile) are, we can begin the translation process.




*Printer software installation.*

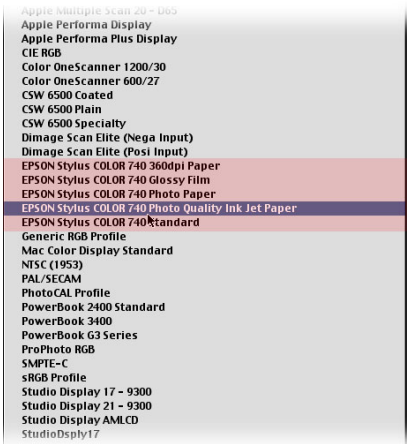



*Figure 24 Each profile has been optimized to represent the gamut of the printer when using various media.*


*Figure 25 Edit>Color Settings.*

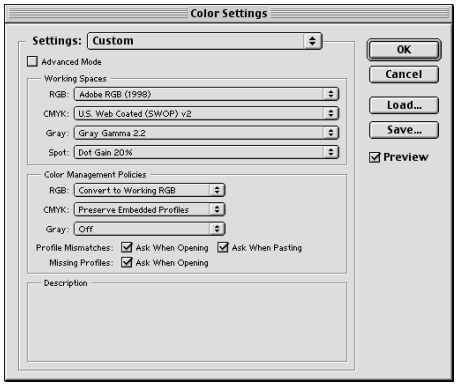
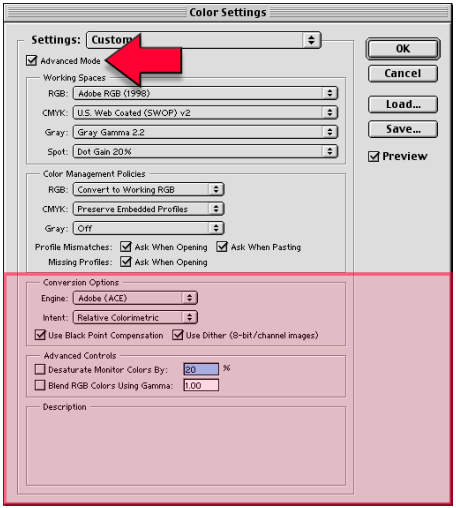



*Figure 26 Color Settings dialog box.*




*Advanced Options.*

*Figure 27 Select Advanced Mode to reveal new color options.*

## Color Management Module (CMM).

The Color Management Module (CMM), sometimes referred to as an engine, is the portion of the CMS that actually reads and then translates the color values between devices. Once the CMM has properly identified the Source profile and the Destination profile, translation can begin.

Photoshop provides four different color engines that can be found in the **Color Settings** dialog box under Advanced options.

Choose **Edit>Color Settings.** [SEE FIGURE 25]

The **Color Settings** dialog box appears. [SEE FIGURE 26]

Select the Advanced check box. [SEE FIGURE 27]

Advanced options appear.

Click the Engine pull-down menu to see the CMM choices that Adobe provides.

If you're a PC user you'll find two options [SEE FIGURE 28]

- Adobe (ACE)
- Microsoft (ICM)

Because Macs are widely used in the graphics industry, Mac users have a few more industry-specific CMM options: [SEE FIGURE 29]

- Adobe (ACE)
- Apple ColorSync
- Apple CMM
- Heidelberg

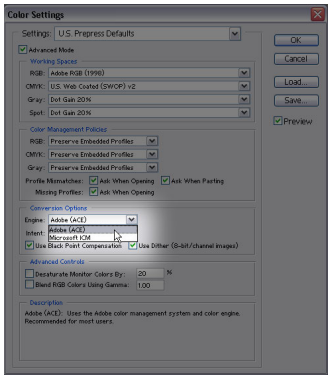



*Figure 28 PC engine choices.*

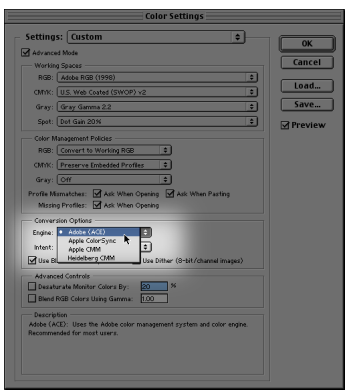



*Figure 29 Mac engine choices.*

## What CMM Should I Use?

The Adobe Color Engine (ACE) is selected by default and will be the best choice for most users. In fact, unless you have a specific reason to choose one of the other CMMs, stick with the Adobe (ACE) color engine.

You can even specify how a translation method takes place. In Photoshop they are known as *rendering intents*.

## Rendering Intents.

In a CMS, a *rendering intent* dictates how the CMM performs a translation based on specific needs.

Here's an overview of the four rendering intents: [SEE FIGURE 30]

1. Perceptual intent is designed to preserve the color relationship between colors so that they are perceived naturally by the human eye. This rendering intent is good for photographs.

2. Saturation is designed to preserve color saturation rather than exact color matching. This rendering intent is typically best for logos and other graphic elements.

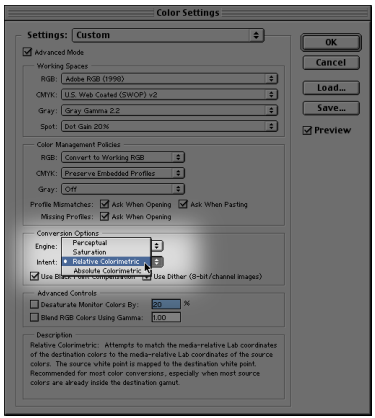


*Figure 30 Drop down with 4 rendering intents.*

3. Relative Colorimetric is the same as Absolute Colorimetric, except that it compares the White point of the Source file to the White point of the destination device and then re-maps all of the colors accordingly. Relative Colorimetric is the default rendering intent used in Photoshop CMS.

4. Absolute Colorimetric is designed to maintain color accuracy without preserving color relationships. This rendering intent is a good choice for photographs, especially if the highlighted information in the source file is accurate.

To learn more, choose **Help>Photoshop Help**.

The Photoshop Help dialog box appears.

Select the Search option and search for Rendering Intents.

### What Rendering Intent Should I Use?

Our recommendation is to stick with the default Relative Colorimetric rendering intent. Adobe uses the Relative Colorimetric rendering intent for all of their pre-defined color-setting configurations. By choosing the **Black Point Compensation** option this rendering intent can be an even better choice than Perceptual.

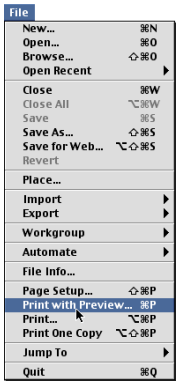



*Figure 31 File>Print with Preview (Mac).*


*Figure 32 File>Print with Preview (PC).*

## Make a Print.

Now that you've got your Source profiles embedded in your images and your Destination profiles for your monitor and printer properly loaded onto your computer, it's time to make a color-managed print.

*It's Important to Remember: Despite the fact that most inkjet printers use CMYK inks, they produce optimum results from RGB files. That's because the majority of inkjet users are non-professionals who, typically, only work with RGB files. As a result, most inkjet printers have been designed to do this color conversion automatically, as the expected workflow.*

With a profiled image open in Photoshop:

Choose **File>Print with Preview**.

Note how the dropdown menu choices are the same for the **Mac** [SEE FIGURE 31] as they are on the **PC**. [SEE FIGURE 32]

The **Print with Preview/Print Options** dialog box appears.

Select the **Show More Options** checkbox option.
[SEE FIGURE 33]

More Options appear.

Choose **Color Management** from the drop-down menu.
[SEE FIGURE 34]

In the **Source Space** section, select a Source Profile.

By default, your embedded Profile will be chosen.
[SEE FIGURE 35]

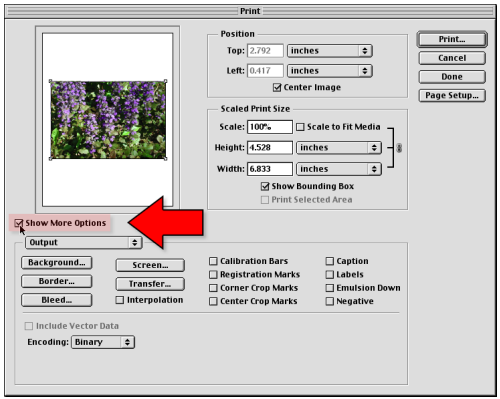



*Figure 33 Select the Show More Options checkbox option.*

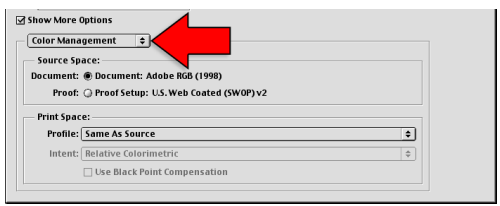



*Figure 34 Choose Color Management.*

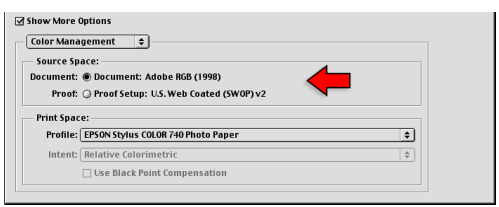



*Figure 35 Source Profile chosen.*

In the **Print Space** section, select a **Destination Profile** from the pull-down menu. Choose a profile that best suits the type of output you are producing. [SEE FIGURE 36]

Choose **Page Setup** to configure your page orientation, paper size, and other printer-specific options.

Be sure to first turn all printer color-management settings off. You don't want to convert your color numbers twice.

Choose **Print** to go ahead and make a color-managed print.

If the resulting print looks exactly as you expected, congratulations, you've just created a color-managed workflow that will create predictable printed output. If your print is not quite right, you can try choosing another Destination profile and make another test. Quite often, this will do the trick. Take careful notes to ensure repeatable results.

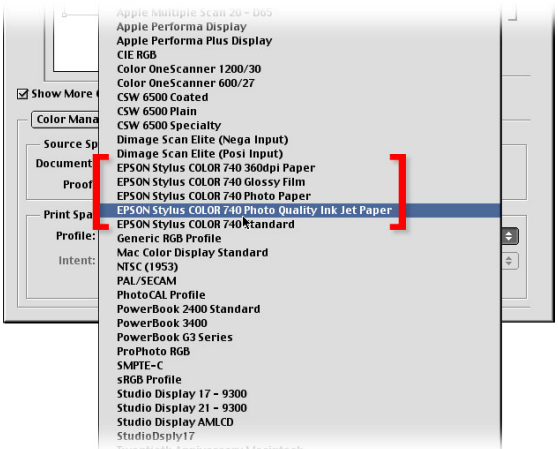



*Figure 36 This Epson printer provides printer profiles for a variety of papers, too.*

## Profiles Are Not Perfect.

Profiles are created to reflect an average situation suitable for a wide range of users under normal conditions. They will provide a good starting point but may need to be tweaked to fit your workflow. In fact, some profiles are just better than others.

One way to accommodate your color workflow is to create a custom profile as an Adjustment Layer in Photoshop. A Color Balance Adjustment Layer or even a Hue-Saturation Adjustment Layer can be created to modify a printer profile and help you produce the perfect print.

## Create an Adjustment Layer.

If your printer produces prints that are consistently green, for example, you can create a magenta Color Balance Adjustment Layer to compensate for the color skew. Once you've achieved the perfect color correction, you can save the Adjustment Layer as a profile that can be applied to every print that is produced on that printer.

Here are the steps you need to take.

Identify the color cast.

Choose **Layer>New Adjustment Layer>Color Balance.** [SEE FIGURE 37]

The Color Balance Adjustment Layer dialog box appears. Drag the color sliders to neutralize the offending color. [SEE FIGURE 38]

Many of Photoshop's Adjustment Layers can be named, saved, and re-loaded with the click of a few buttons. Unfortunately, the Color Balance Adjustment Layer lacks this convenient feature. Since we do want to save this

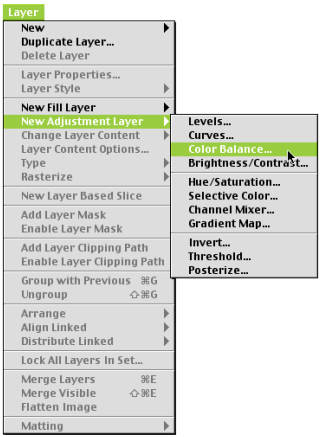



*Figure 37 Layer>New Adjustment Layer>Color Balance.*

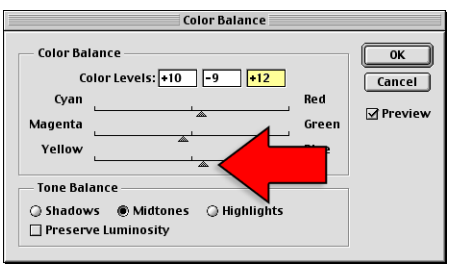



*Figure 38 Drag the color sliders to neutralize the offending color.*

adjustment, we'll have to find another way to do it. One way would be to save the entire image file in the Photoshop format with the Adjustment Layer intact.

Click **OK**, to apply the Color Balance Adjustment and create a new layer.

Now we'll save the file to location where it can be retrieved easily.

Choose **File>Save As.** [SEE FIGURE 39]

The **Save As** dialog box appears.

Name the file appropriately. Choose Photoshop as the file format. We have named ours "Epson_Color Correction.psd". [SEE FIGURE 40]

Click **Save**.

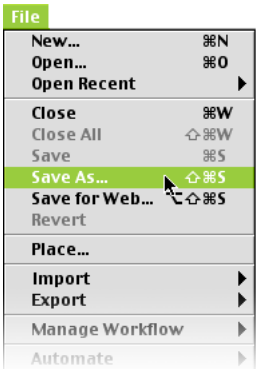



*Figure 39 File>Save As.*

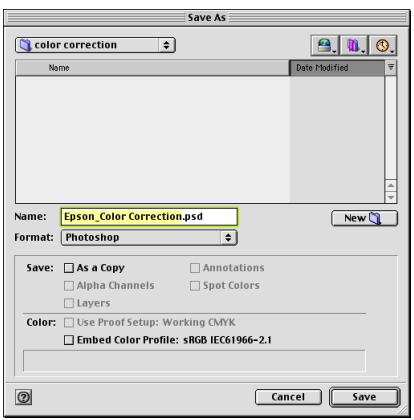



*Figure 40 Save As dialog box.*

The file (including the Adjustment Layer) is saved for future use.

To apply the color adjustment to another image, open both the "Epson_Color Correction.psd" file and the image in need of correction.

Resize both images so they fit side-by-side on your monitor. [SEE FIGURE 41]

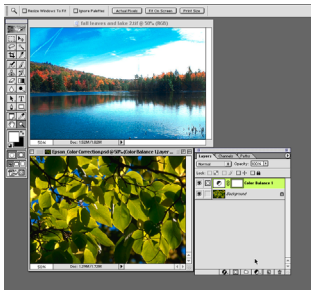


*Figure 41 Resize both images so they fit side-by-side on your monitor.*

Activate the "Epson_Color Correction" file.

Open the Layer palette if it's not open already,

Choose **Window>Layers**.

Click and drag the Color Balance Adjustment Layer from the Layer palette onto the Canvas of the uncorrected image.

When a thick border appears, release the mouse. [SEE FIGURE 42]

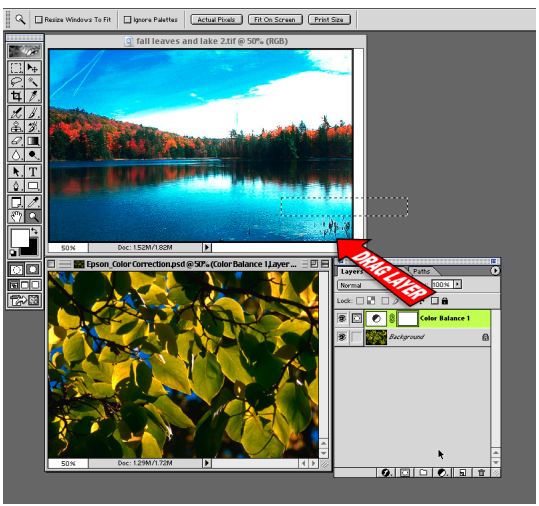



*Figure 42 When a thick border appears, release the mouse.*

The Adjustment layer is copied and applied to the new image. [SEE FIGURE 43]

Adding a common color correction to all images shot under similar conditions should help you to achieve more consistent, predictable output.

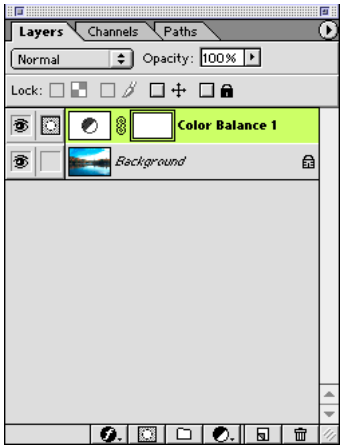



*Figure 43 Layer palette with new adjustment layer added.*

## Soft Proofing.

It's important to remember that color management standardization is a work in progress. Sometimes the most successful innovations are ones that are based on processes we are already accustomed to. A good example of this is the pre-production proof.

In the printing world, a hard proof is an actual printed sample of any job that is intended for volume reproduction. Because of the high cost of 4-color printing, proofs provide a safety net for common problems such as typographical errors, color issues, etc.

Photoshop provides a unique method of proofing color with a process known as soft proofing. Soft proofing allows you to estimate how an image will appear printed on a profiled device right on your computer monitor.

Open an image in Photoshop.

Choose **View>Proof Setup**. [SEE FIGURE 44]

Locate your intended printer profile in the pull-down menu and select it to see a soft proof of your image. If set up correctly, a soft proof should be an accurate color representation of the printed output based on the destination profile provided by the system.

Soft proofing is only as good as your Color Management System. As the concept of profiling becomes more widespread, soft proofing will become invaluable for producing accurate printed output on any printing device.

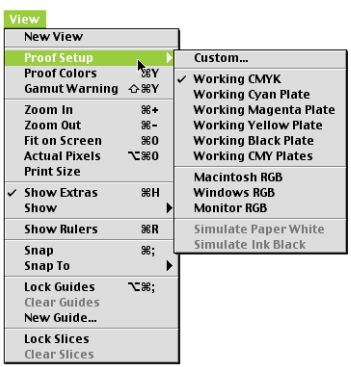



*Figure 44 View>Proof Setup.*

## Conclusion.

It is also important to remember that some pictures are better when they have a distinct color skew. Consider a blue snowy scene or a deep red/magenta sunset. Both situations would probably suffer from a "color correction." So consider your subject as well as the mood you are trying to set before you consider a color adjustment. Remember: beauty is in the eye of the beholder. As a photographer and Photoshop artist, color is well within your control.

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