

When the check boxes are off, you can automate how Photoshop deals with documents but the safety net is gone.

Setting a policy to **Preserve Embedded Profiles** and having the check boxes on provides the best safety net and flexibility.

### **Tutorial #6: Assign Profile<sup>3</sup> versus Convert to Profile Command**

This tutorial is intended to illustrate not only the differences between the **Assign Profile** command and the **Convert to Profile** command, but also how altering Photoshop's Color Settings affects untagged files. As you will see, when dealing with untagged files, altering the Color Settings produces a behavior that is identical to using the **Assign Profile** command. This tutorial illustrates how altering the Color Settings affects only untagged documents, whereas those with embedded profiles retain their color appearance thanks to the Document Specific Color architecture in Photoshop.

1. Choose **Color Settings** in Photoshop CS (**Command/Control-Shift-K**).
2. For this exercise, set the Color Settings to **U.S. Prepress Defaults (North America Prepress 2)** in Photoshop CS2). Notice that the RGB working space for this saved setting is Adobe RGB (1998) and the policy is set to **Preserve Embedded Profile** as shown in Fig. 9-6-1. Make sure that your settings match those in Fig. 9-6-1, and then click **OK** to accept.
3. Open the **BabyTosh.tif** image, which is in the Tutorial folder that shipped with this book. You should get a **Missing Profile** dialog as seen in Fig. 9-6-2. Notice that you have an option to keep the document untagged as seen with the radio button named **Leave as is (don't color manage)**, assign the working space [**Assign working RGB: Adobe RGB (1998)**] as was set in the **U.S. Prepress** setting, or assign a profile by using the **Assign profile** pop-up menu. It's quite possible that the profile in the bottom radio button is different from what you see here, as it is "sticky," meaning it remembers the last setting selected. In Fig. 9-6-2, it happens to be set to **Colormatch RGB**.
4. Select the top radio button **Leave as is (don't color manage)** and click **OK**. The document opens but it's quite possible the preview you see doesn't look very good. For this tutorial, have the **Document Profile** indicator picked in the pop-up below

<sup>3</sup>In Photoshop CS, the **Assign Profile** command is accessed in the **Image-Mode** submenu. In Photoshop CS2, this command has been moved to the **Edit** menu.

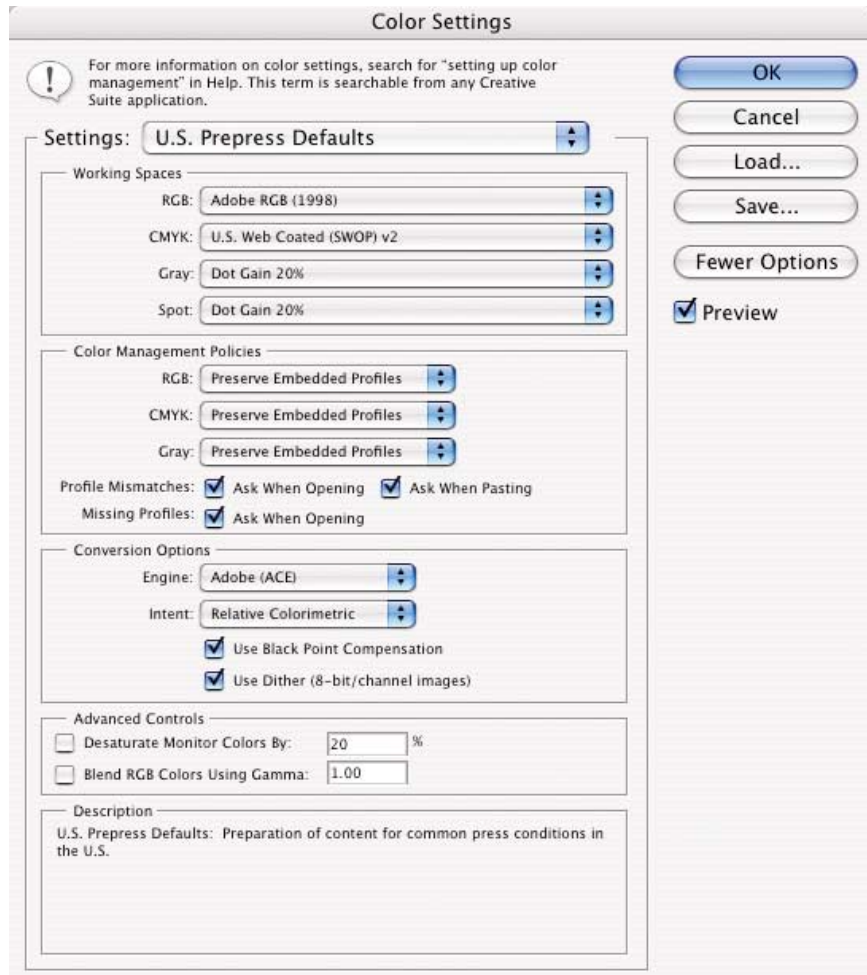


Fig. 9-6-1 After choosing the Color Settings, this dialog appears. Set the Settings pop-up menu to U.S. Prepress Defaults (North America Prepress 2 in Photoshop CS2) as seen here and click OK.



Fig. 9-6-2 The Missing Profile dialog appears because BabyTosh.tif has no embedded profile. The profile seen in the Assign Profile pop-up menu may not match the profile you see since the last selected profile appears here.

and to the left of the image. This should indicate that this image is **Untagged RGB** as seen in Fig. 9-6-3.

5. Open the document **Dog\_in\_Bowl.tif** that is also in the Tutorial folder that shipped with this book. You should get an **Embedded Profile Mismatch** dialog as seen in Fig. 9-6-4. Notice that this dialog provides some very useful information. We can see that the document being opened has sRGB embedded and the dialog reminds us that the currently set RGB working space is in Adobe RGB (1998). Because the Color Settings policy is set to **Preserve Embedded Profiles** the default is for the top radio button to be selected: **Use the embedded profile (instead of the working space)**.

Notice that we could convert the document from sRGB to Adobe RGB to match the RGB working space if we selected the second radio button name **Convert document's colors to the working space**. However, there's no reason to do this just to get the document to preview correctly. We want to keep this document in sRGB so just keep the top radio button: **Use the embedded profile (instead of the working space)** checked and click **OK**.



Fig. 9-6-3 After **BabyTosh.tif** is open, the **Profile** indicator shows that this is an untagged document.

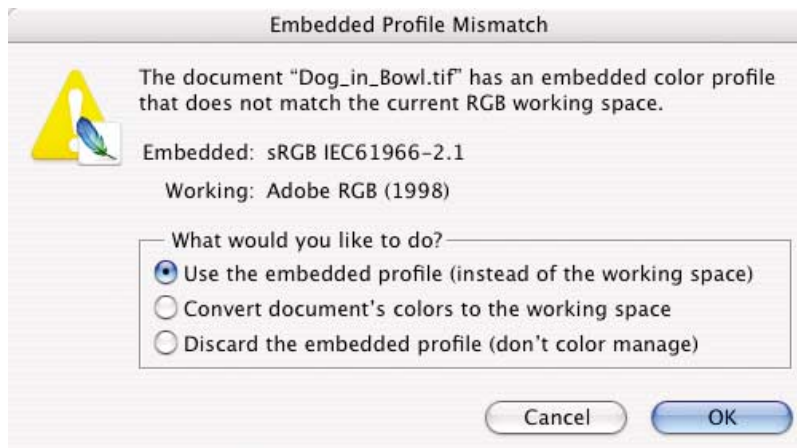


Fig. 9-6-4 The **Dog\_in\_Bowl.tif** document has the sRGB profile embedded therefore this **Embedded Profile Mismatch** dialog appears. Allow the default top radio button to be selected [**Use the embedded profile (instead of the working space)**] and click **OK**.

6. Arrange both document windows so you can easily see both images side by side. You can hide all the Photoshop tool palettes by holding down the **Tab** key to make more room to view the two documents. Now go into Photoshop's **Color Settings** and just change the **RGB working space** from **Adobe RGB (1998)** to **sRGB**. Examine the two documents. You may need to move the **Color Settings** dialog around to see both documents. The document that was untagged (**BabyTosh.tif**) changes its appearance because we have provided a new description for this untagged document.

We, in essence, have “assigned” sRGB to this document and therefore the preview has changed. The **Dog\_in\_Bowl.tif** document doesn't change its appearance at all because Photoshop is still using its embedded sRGB profile for the preview. What you can see here is that untagged documents are quite problematic! The appearance of these documents is affected by whatever working space happens to be assigned in Photoshop's Color Settings. Also, be aware this behavior seen is true for Grayscale documents that have gamma settings or dot gain settings, and for Untagged CMYK documents as well. Alter Photoshop's Color Settings and untagged documents will alter their appearance when working spaces are changed. This is an important behavior to understand. Photoshop has to make some assumption about the color space of untagged documents and that assumption happens to be the currently set working space for RGB, CMYK, or Grayscale.

Let's now examine how the **Assign Profile** command produces similar results with documents.

1. Go back into the **Color Settings** dialog if you dismissed it earlier, and now toggle the settings from **U.S. Prepress Defaults** to **Color Management Off** as seen in Fig. 9-6-5. Notice that the policies are set to **Off**. Click **OK** to accept the new changes.
2. Make a new document (**Command/Control N**). For this tutorial:  
 Set the **Preset**: sizes of **1024 × 768**.  
 Set the **Color Mode**: **Grayscale/8 bit**.  
 Set the **Background Contents**: **White**.  
 Be sure the **Advanced** arrow is in the up position as seen.  
 Notice that the default color profile is set to **Don't Color Manage this Document** as seen in Fig. 9-6-6. Click **OK**, and when the document opens, you may need to enlarge the document window but you should see the Document Profile indicator set as **Untagged Grayscale**.

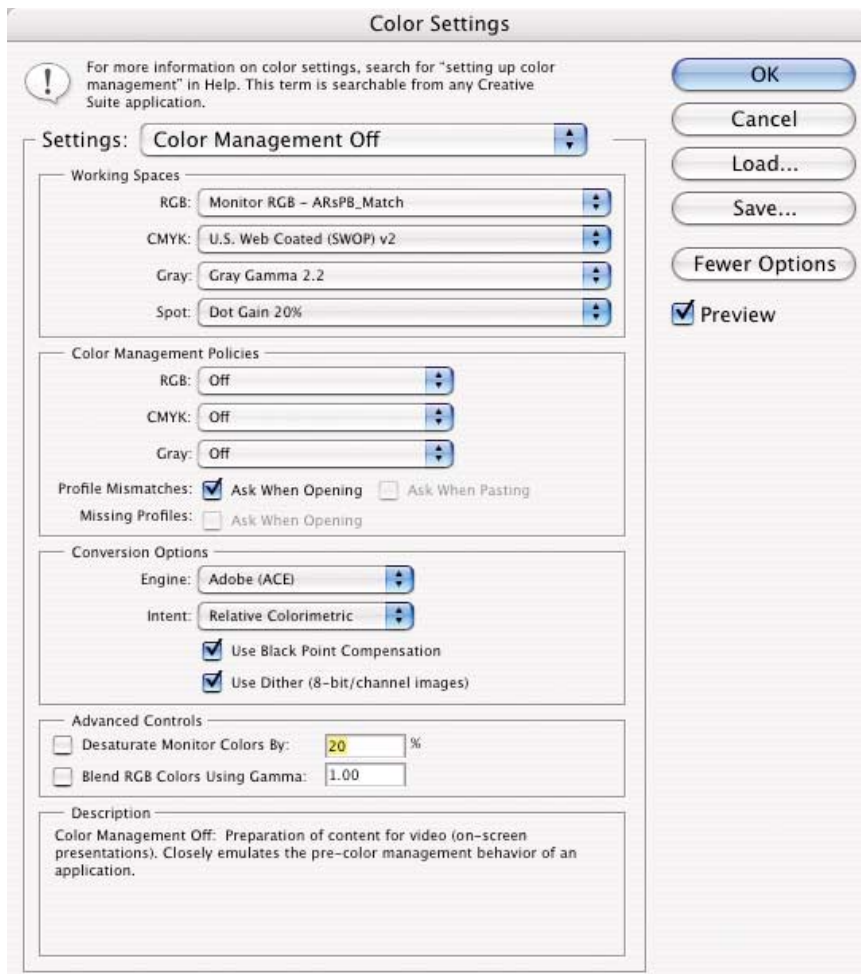


Fig. 9-6-5 After choosing the Color Settings, this dialog appears. Set the **Settings** pop-up menu to **Color Management Off** as seen here and click **OK**.

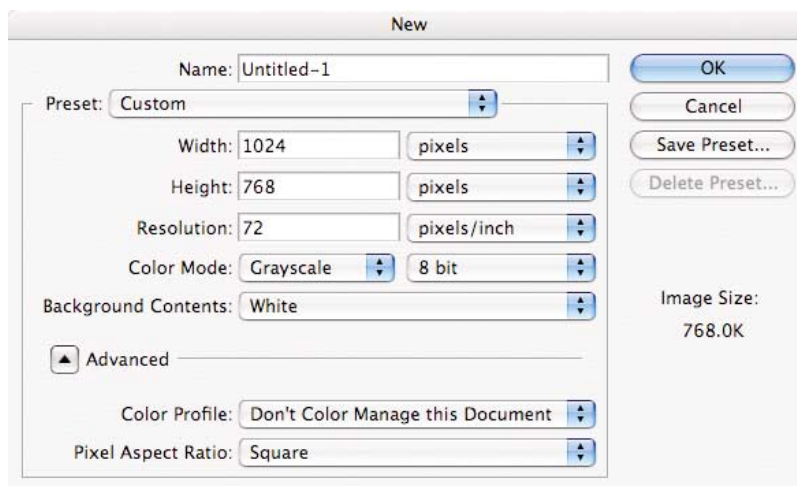


Fig. 9-6-6 Set Photoshop's new document command as seen here.

3. Choose **Edit-Fill** menu when the **Fill** dialog appears as seen in Fig. 9-6-7. Choose the **Use:** pop-up menu and select **50% Gray**, **Blending Mode: Normal**, **Opacity 100%**, then click **OK**. The image is filled with gray.
4. Go back into the Photoshop Color Settings dialog and change the **Gray** pop-up menu in the working space area of the dialog from **Gray Gamma 2.2** (the default) to **Gray Gamma 1.8** (or to other dot gain settings). Notice that the Grayscale document you just made changes its appearance, which is logical as this file is an untagged document. Go back into the **Color Settings** dialog if you dismissed it earlier and toggle the settings from **Color Management Off** back to **U.S. Prepress** and click **OK**.
5. Select **Image-Mode-Assign Profile** in Photoshop CS or **Edit-Assign Profile** in CS2. The dialog shown in Fig. 9-6-8 will appear. Make sure the **Preview** check box is on. If you wish to assign the currently specified Grayscale working space, which is dot gain 20%, do so by selecting the middle radio button. However, for this exercise, click the third radio button and notice that as you toggle different options in the **Profile:** pop-up menu, two changes occur.

First, the preview changes because you are informing Photoshop exactly what profile description to use for the preview, and eventually for conversions, of this document.

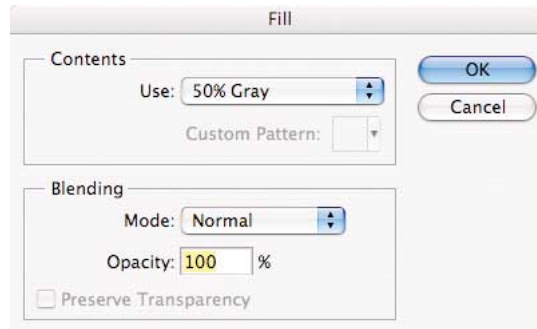
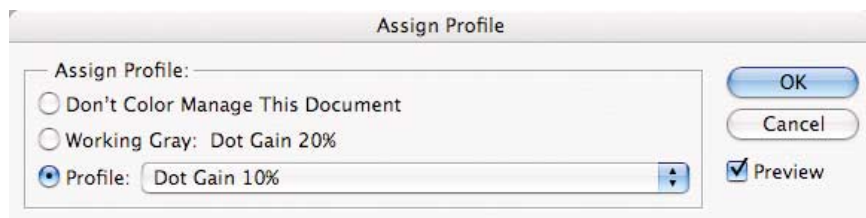


Fig. 9-6-7 The Fill command should be configured as seen here.

Fig. 9-6-8 Select the **Assign Profile** command, select the **Profile** radio button and toggle different Grayscale profiles in the pop-up menu while watching the color appearance and Profile indicator in the document.



Additionally, notice that the document's profile description indicator updates itself as soon as you release the pop-up menu. If you click **OK**, whatever profile you've assigned will be used to preview the document. That profile, in this case a gamma or dot gain setting, will be assigned and saved to the document. The document is no longer untagged.

The document-specific color features in Photoshop will now be used for this document regardless of the working space settings. If you wish to try using the **Assign Profile** command and choose different profiles on **BabyTosh.tif** using color profiles, go ahead since it was untagged. You will see a similar behavior as you did with the Grayscale document, earlier. The **Assign Profile** command doesn't alter any of the data in the document; the numbers remain the same. You can test this by having the info palette accessible. To see this, chose the **Assign Profile** command and examine the numbers in the info palette as you toggle different profiles within the **Assign Profile** dialog. Although the appearance of the document may change as you toggle different profiles, the numbers remain the same. **Assign Profile** changes the definition of the numbers as far as Photoshop is concerned. You can close the Grayscale document you made in step 2, there is no reason to save it to disk.

The **Assign Profile** command can be used to remove a profile, although the likelihood of needing to do this is rare. The **Assign Profile** command can be used in a situation where there's an untagged document but you know the correct profile that should be used to describe this document for Photoshop. This could occur when you have an image from a scanner or digital camera that can't embed a profile at the time of capture.

### **Convert to Profile**<sup>4</sup>

The **Convert to Profile** command in Photoshop does indeed change the numbers in the document, unlike the **Assign Profile** command. **Convert to Profile** also assigns the correct profile after a conversion has occurred so that if you were to convert a document from Adobe RGB (1998) to sRGB, the numbers would change in the document. The document would be tagged (assigned) sRGB as well. This ensures that a proper preview will be seen. For example, when a user converts from an Adobe RGB (1998) to Epson 2200 RGB using the **Convert to Profile** command in Photoshop, the image is converted to the new color space

---

<sup>4</sup>In Photoshop CS, the **Convert to Profile** command is accessed in the **Image-Mode** submenu. In Photoshop CS2, this command has been moved to the **Edit** menu.



and the correct profile (Epson 2200) would be assigned and embedded into the document. Since Photoshop supports document-specific color, the Epson 2200 profile is used for the preview. In fact, the preview is now a soft proof of the output. For these reasons, it's ideal to use the **Convert to Profile** command for all colorspace conversions. Additionally, you can toggle different rendering intents, CMMs, and other options in the **Convert to Profile** command, and the underlying image that's affected will update its preview based on these options prior to document conversion. Let's see this in action.

1. Have the **Dog\_in\_Bowl.tif** document open and active.
2. Choose **Image-Mode-Convert to Profile** in Photoshop CS or **Edit-Convert to Profile** in CS2 as seen in Fig. 9-6-9.  
From the **Profile** pop-up menu, select **U.S. Web Coated (SWOP) v2**.

From the **Engine** pop-up menu, select **Adobe ACE**.

From the **Intent** pop-up menu, select **Relative Colorimetric**. Have **Use Black Point Compensation** and **Use Dither** check boxes on.

Be sure the **Preview** check box is on.

Notice that the name of the **Source Space** is sRGB. By changing the output profile from **U.S. Web Coated (SWOP) v2** to another output profile that happens to be loaded on your computer, you should see the preview of the **Dog\_in\_Bowl.tif** document change. In addition, you'll notice that changing the **Rendering Intent** pop-up menu or **Black Point Compensation** check box settings will also affect the preview. This allows us to pick the best possible settings on an image-by-image basis, based on the preview we see. Now it's possible to pick a relative colorimetric intent over a perceptual

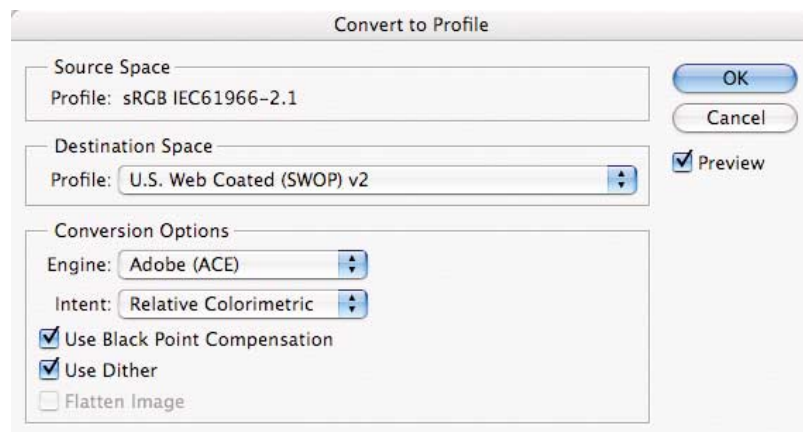


Fig. 9-6-9 The **Convert to Profile** command should be set as seen here.



intent based on preferences of how the document previews. You likely will not see much, if any, change by toggling the CMM. However, it's worth testing.

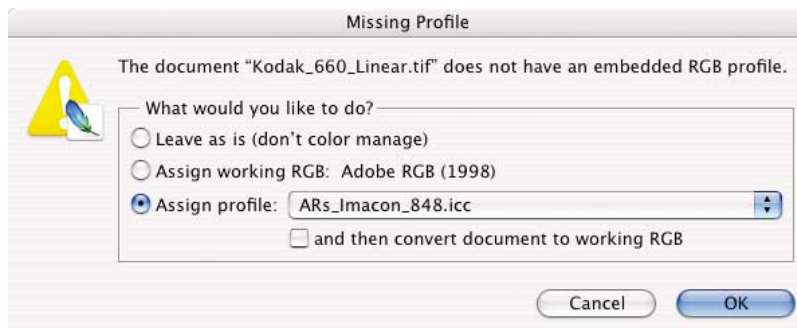
3. To continue, **Cancel** out of the **Convert to Profile** dialog and be sure to reset your Color Setting back to **U.S. Prepress Defaults (North America Prepress 2)** in Photoshop CS2).

**Convert to Profile** is a great way to ensure there are no surprises when performing color space conversions because the preview shown will be a very accurate indication of what the output should look like, assuming accurate profiles for your display and output device. After accepting the changes and clicking **OK**, the **Convert to Profile** command will alter all the data in the document using both the source and destination profiles chosen and will assign the correct destination profile to the document. The document will be saved with the correct profile assigned and be embedded in the document. The document will then preview correctly without regard to other Color Settings (working spaces) because it is based on an assigned profile.

## Tutorial #7: How to Handle Untagged Documents

Untagged documents present a challenge to users working with color management because our CMS has no idea what the true definition of the numbers in the document are. For this tutorial, you will need to install an ICC profile in your system. On the CD in the tutorial's /ICC\_Profiles folder is an ICC profile called **Kodak\_660\_Linear.icc**, which is a custom camera profile for the matching file you will be working with (**Kodak\_660\_Linear.tif**). See Chapter 1, page 42 to find out where this profile needs to be installed based upon your operating system.

1. Open the file **Kodak\_660\_Linear.tif**.
2. You should get a **Missing Profile** dialog as seen in Fig. 9-7-1, since this image has no embedded profile. For now, pick the top radio button **Leave as is (don't color manage)**. This is a good



**Fig. 9-7-1** Since the document **Kodak\_660\_Linear.tif** does not contain an embedded profile, the **Missing Profile** dialog will be seen. Select the top radio button **Leave as is (don't color manage)**.