

WORKING WITH COLOR

- Color Management
- Web Safe Colors
- Choosing Colors
- Creating and Saving Color Look-Up Tables (CLUT) and Swatch Palettes
- Antialias vs. Alias and the Color Table
- HTML and Color

COLOR MANAGEMENT FOR THE WEB

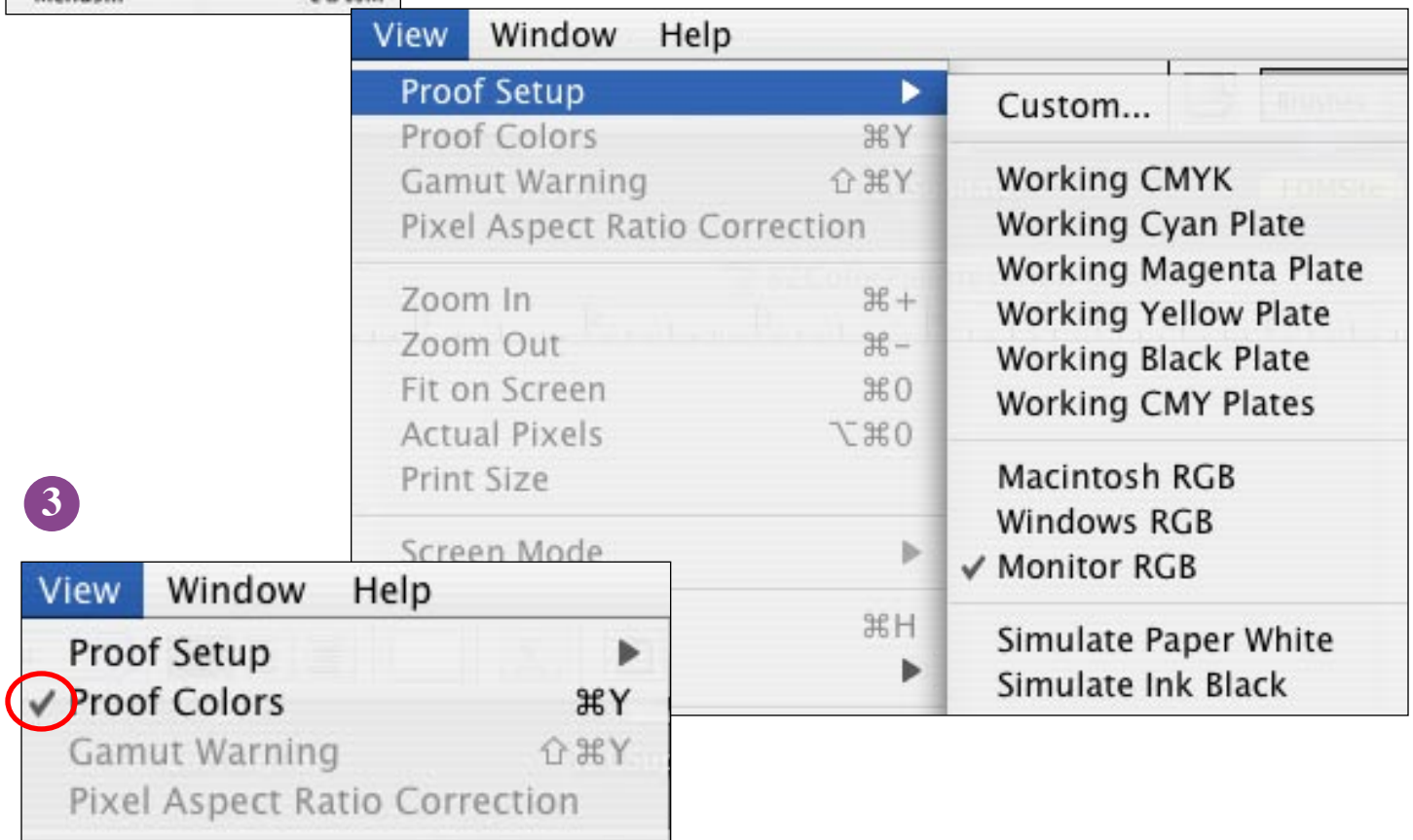
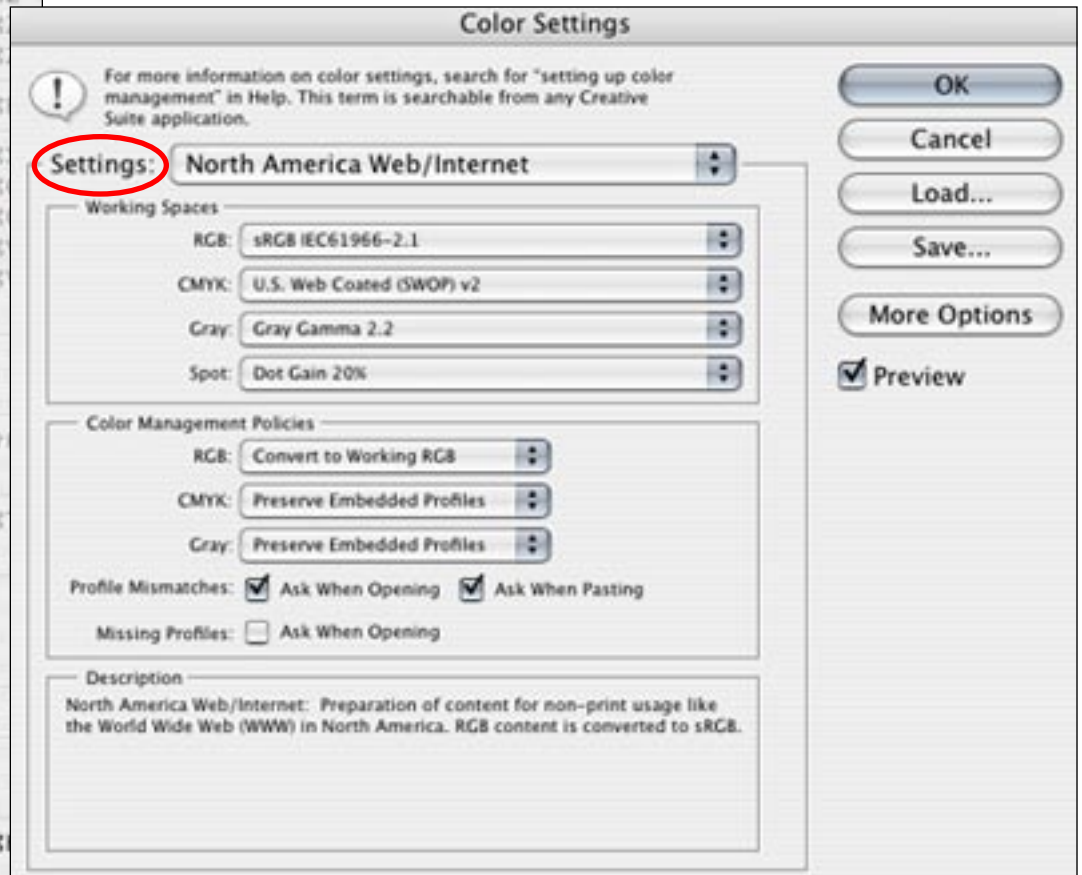
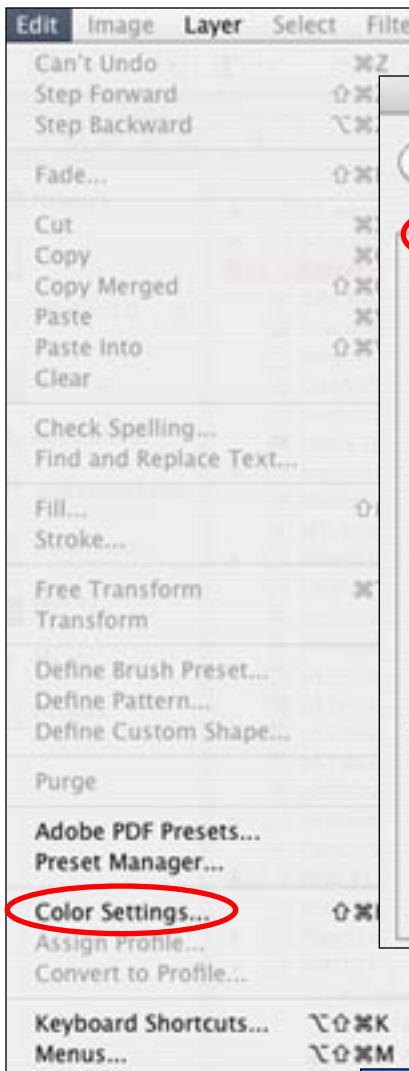
Trying to get your colors right for the web can be frustrating. Mac and PC monitors see color differently. Macs tend to be brighter than PCs because they have a Gamma setting of 1.8, whereas PCs have a 2.2 Gamma. Gamma has to do with contrast. A 2.2 Gamma creates a darker monitor screen. So when you create a document on a PC, colors may look too bright or washed-out on the the Mac and a document created on a Mac may look too dark on the PC. Mac users can set there monitors to a 2.2 Gamma to emmulate the PC environment in the System Preferences to correct this problem, but it will change colors for all applications used.

Applications can see color differently too. A document created in Photoshop may display different colors when brought into ImageReady or your browser such as Internet Explorer. This is critical as after you have spent long hours choosing the colors for a website, you don't want them to shift when your work goes online. There are some important settings to take care of in Photoshop before starting any web development to safeguard your colors.

DO THIS FIRST! (see next page for pictures)

- 1 In PHOTOSHOP CS2 set the **Color Settings** to North America Web/Internet. (NOTE: In older versions of Photoshop set the Settings to sRGB. Color Settings may be found under the File, Edit or Photoshop menus depending on the version you have and the platform.) If you have a file that was setup for print, it is recommended to not to use the color profiles. Most browsers do not recognize color profiles at all and they can increase the size of your file considerably. ImageReady only has web settings since it was designed for web work.
- 2 Then WITHOUT a document open in Photoshop, go to the menu View > **Proof Setup** > Monitor RGB. Set it to Windows RGB for PC users. If you want to see how the images will look on a Mac, set the Proof Setup to Macintosh RGB. In ImageReady WITHOUT a document open go to View > Preview > Uncompensated Colors to make it the Preview setup.
- 3 Open a document in Photoshop and make sure that **Proof Colors** is checked under the View menu. This will assure that colors are the same in other applications like the browser.

We can't control all instances of color. Users can change the brightness of their monitors manually. And even the lighting conditions of a room can affect the way color looks on a monitor screen. But at least if you follow these three steps, you should be able to control it enough in the creation of web images. You will also be able to preview the color or brightness difference between Mac and PC platforms.



WEB SAFE OR BROWSER SAFE COLORS

What are browser safe colors? And why do we need them? These are questions that one rarely needs to ask today. But since the terms are so prevalent let's define them. Every browser has a color palette made up of 216 colors in common with 40 additional colors that vary. This is 8 bit or 256 colors, just as gifs can only be 8 bit. But this 8 bit refers to the video card of the computer. With a 8 bit video card, any colors outside the browser palette would be shifted or dithered. Today all video cards are at least 16 or 24 bit allowing for more colors. So technically we do not need to adhere to the browser palette or web safe colors. But it does help one to understand color and hexadecimal coding. And the picture cell phones are using a special palette based on this concept. The browser safe palette is based on a 6 x 6 x 6 cube which contains 6 possible values of R, G, B (Red, Green and Blue).

The hues (individual different colors) are defined as follows:

R = 255, 0, 0

G = 0, 255, 0

B = 0, 0, 255

white = 255, 255, 255 (composed of 100% of red, green and blue)

black = 0, 0, 0 (the absence of all color)

yellow = 255, 255, 0 (composed of 100% red and green)

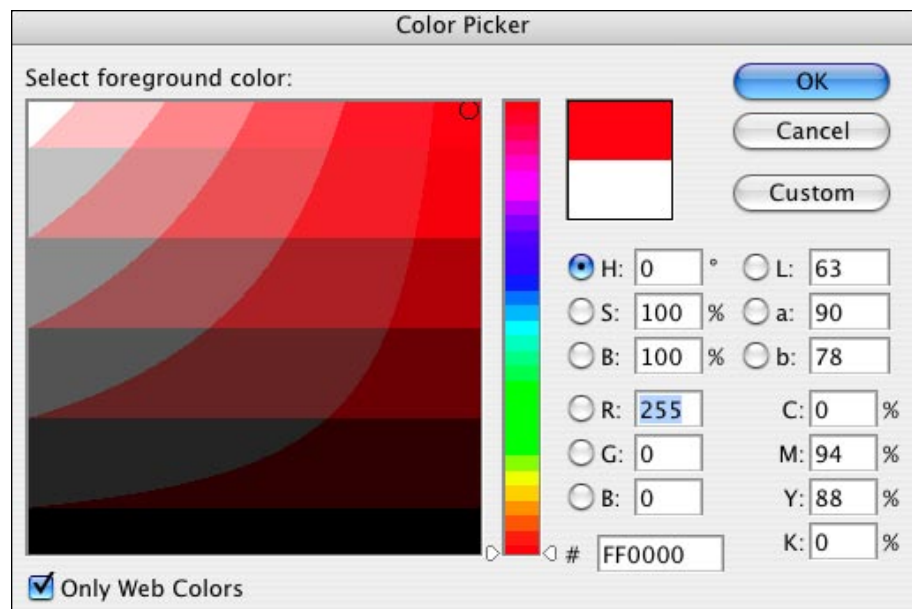
cyan = 0, 255, 255 (composed of 100% green and blue)

magenta = 255, 0, 255 (composed of 100% red and blue)

The Photoshop Color Picker shows the RGB values and the hexadecimal code for each color.

Here you can see these for the color Red.

By checking Only Web Colors you can see how many less colors exist as web safe.



Values (shades of a hue or particular color) are defined by 51. For instance shades of red would span the six possibilities from black to red like this: 0 (black), 51, 102, 153, 204, 255 (red) then 51, 102, 153, 204 represent values of red.

These numbers in combinations give all the browser safe colors and values. There are hexadecimal codes for all the 256 browser colors but only six of them are web safe. These six colors in combination give the 216 common web safe colors. Here is a chart that shows a comparison of the six colors (RGB) and hex code and percentages.

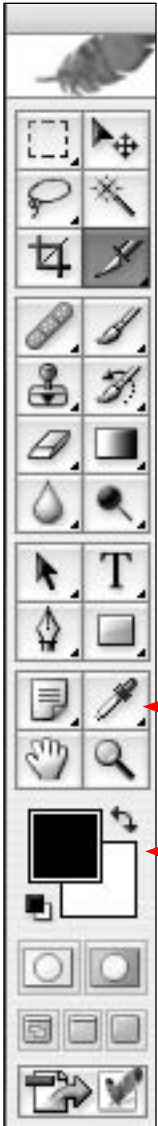
RGB	0	51	102	153	204	255
HEX	00	33	66	99	CC	FF
%	0%	20%	40%	60%	80%	100%

This chart shows for example that pure red which is 255, 0, 0 would equal the hex code of FF0000 in correlation to the defined hues above. This may seem complex, but once you look at it closer it is really cool. Use it or leave it.

CHOOSING COLORS

There are four options for choosing color in Photoshop and ImageReady:

- Color Picker
- Color Palette
- Swatches Palette
- Eyedropper Tool



The Color Picker is accessed by clicking the foreground or background color in the Toolbar. It allows you to view web safe colors and type in hexadecimal colors as shown previously.

The Color Palette allows you to choose color by mixing various amounts or typing in a known value. Access it from the Window menu. When you change a color in the Color Picker it reflects that color in the Color palette.

The Swatches Palette is accessed from the Window menu. It allows you to choose preset colors or create and save your own color sets. It's a good idea to create a custom swatch palette for each website you create. This palette holds all the colors that will be used in the site.

The Eyedropper tool allows you to sample color from any existing image. This can be a good way to create a custom swatch palette or maybe you just need a color to match an image you are using on the same page. You can sample colors with the eyedropper from one document to another. It is found in the Toolbar.

Eyedropper Tool

Foreground and Background Colors
Click on one to get the Color Picker.

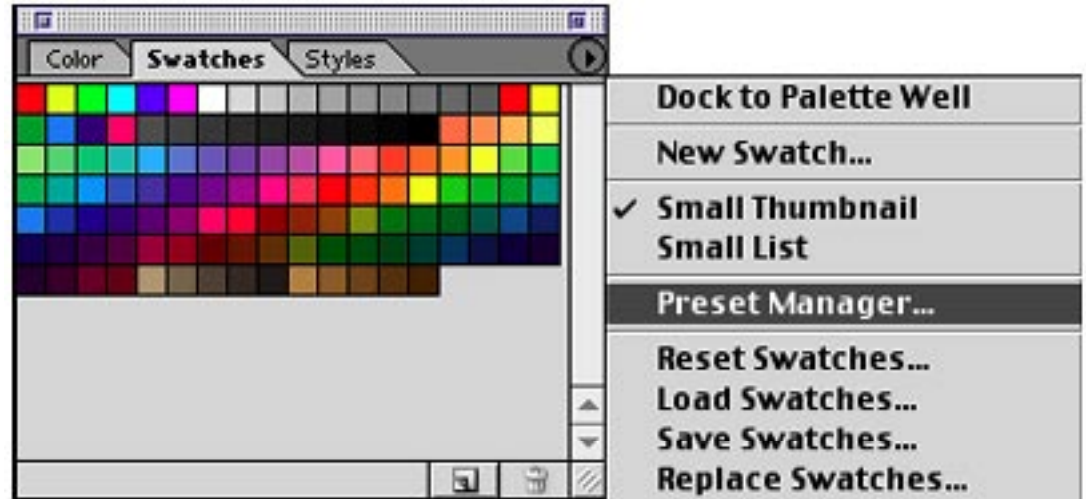
CREATING CUSTOM PALETTES

What is a custom palette? A custom palette is a palette of colors that you can create and will contain only the colors that you want to work with in designing your website or graphics. There are several types of custom palettes that you can create. We will discuss creating a Swatch Palette and an Indexed Palette. We will use Photoshop and ImageReady for creating custom palettes. However, Photoshop is more versatile and you cannot index images in ImageReady.

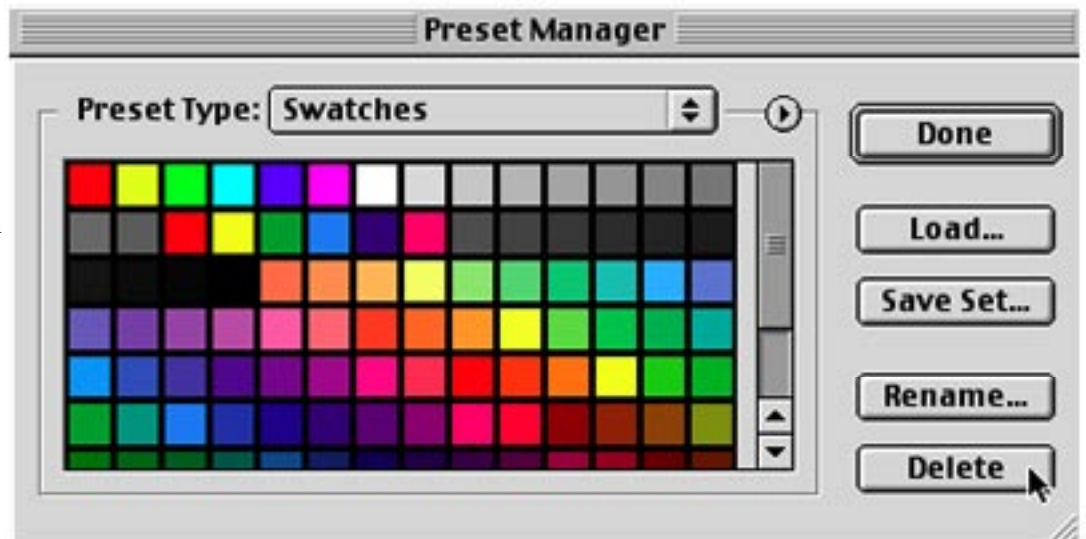
CREATING CUSTOM SWATCH PALETTES IN PHOTOSHOP

Before beginning design on a website, you may want to set up a custom swatch palette representing colors that will be used in your site. Here is an easy way to create your own swatch palette. In Photoshop, this method does not work in ImageReady, open the Swatches palette. In the pop-out menu choose Preset Manager. The Preset Manager is a way to store your custom palette. It is also where you can load other palettes or edit and make a new palette. Since we want to create a custom palette of special colors, the first step is to clear the Swatches of all color. Then we can build a new palette with the colors of choice.

1. Open Preset Manager.



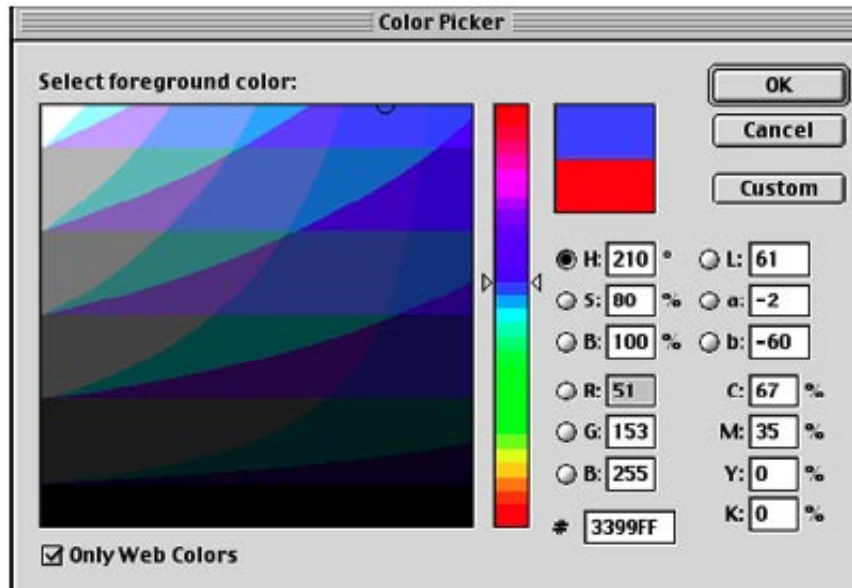
2. Select All (command A or Ctrl A). Click on Delete. Note: You can also click on individual colors to select them if you do not want all the colors deleted. Selected colors will have a black border outline.



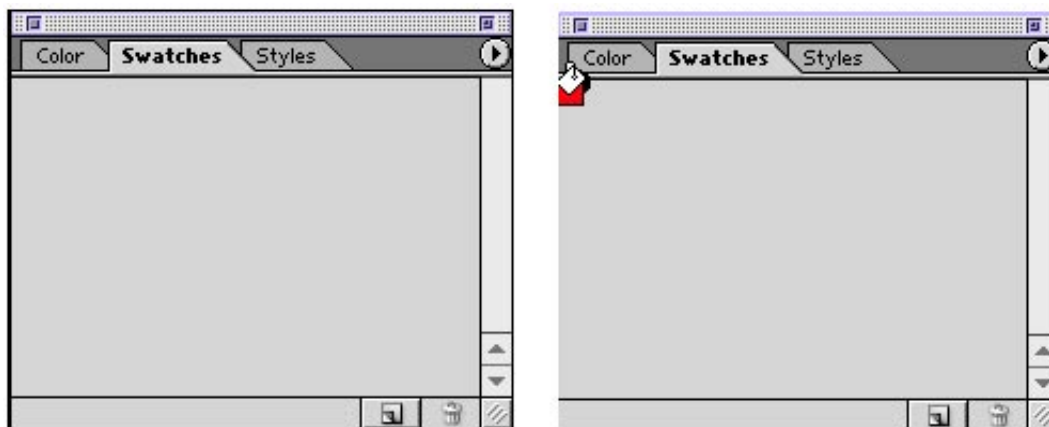
3. Click Done.



The Swatches Palette should now be empty or blank. To add a color to the Swatches Palette click on the Foreground color in the Tool bar and choose a color by clicking the rainbow bar for the Hue you want and then clicking in the large box to the left of it to choose the color. By clicking on Only Web Colors, web safe colors will be displayed.



To add the foreground color to the Swatches Palette just click inside it, a paint bucket will appear. To delete a color from it, hold the Option/Alt key over the color you want to delete and click. Save the palette after you have finished adding all the colors you want to use.



CREATING A COLOR TABLE FROM MULTIPLE FILES

Sometimes it is necessary to create a color table from more than one document or file. To do this the individual documents need to be combined into one. You can do this by increasing the Canvas Size of one of the documents and then dragging in the others.

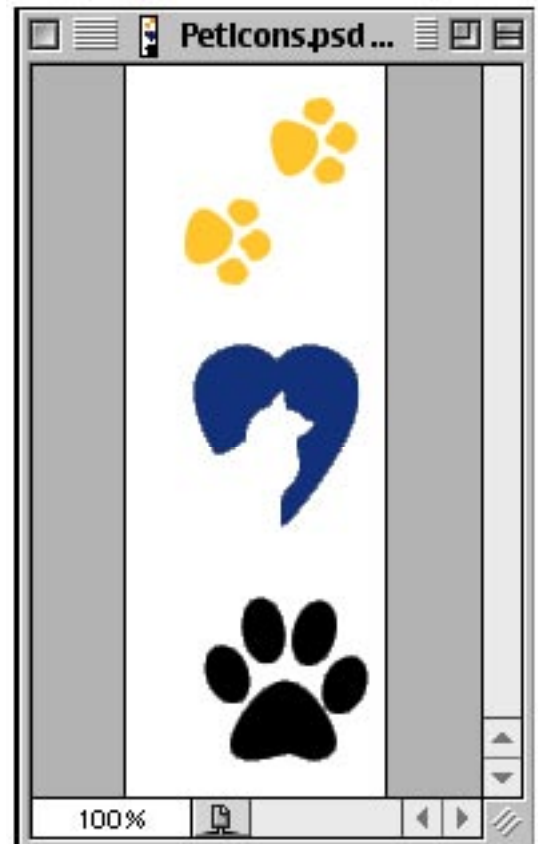
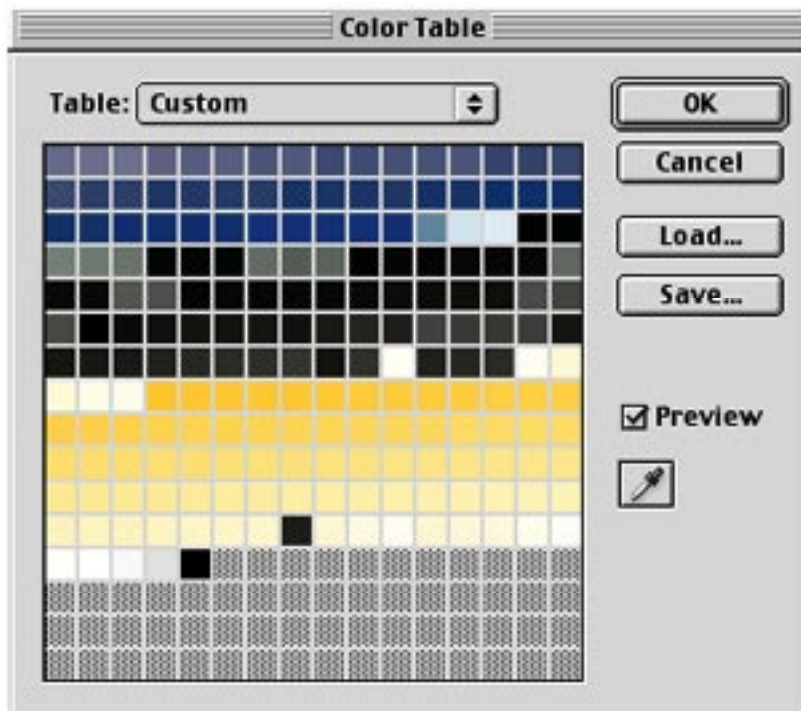


Three Individual Documents

Borrowing Existing Color Palettes

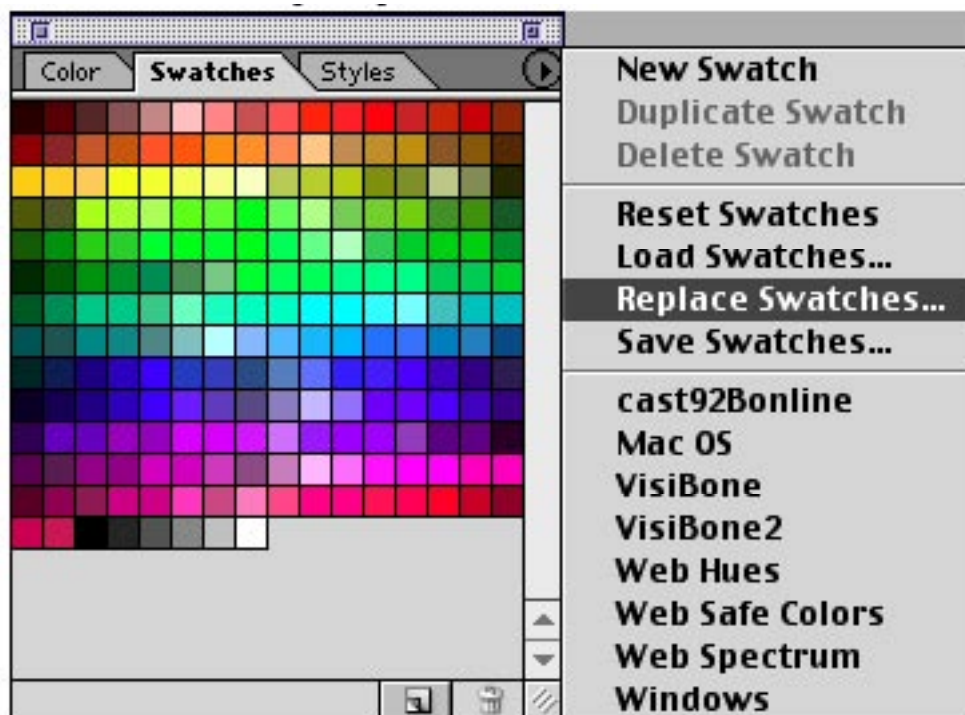
Say you see a color combination or design that you really like on someones website. You can borrow color palettes from images existing on the web by downloading the image, viewing its color table and then saving it.

Here are the three documents combined into one and the Color Table created for the combination. This is called a Super Palette. Now these colors could be used for constructing a website or other graphics. To use them the saved color table could be loaded as a Swatch palette. Note: You could also save a color table for each document and load them all together in swatches.



LOADING A COLOR PALETTE INTO A SWATCH PALETTE

You can create a color table from an image and then load it as a Swatch palette. In the Swatch palette go to the pop-out menu to Replace Swatches. You will then be asked to find a file. Choose the .act from the saved colortable. The Swatches will change to your saved colors. Load Swatches adds colors to the palette colors that already exists thus creating two palettes into one. Save Swatches will save an .aco document so you can use the palette again. There are many swatch libraries available to load. Lynda author of the HOT book provides some on the CD and her website. Photoshop also provides some.



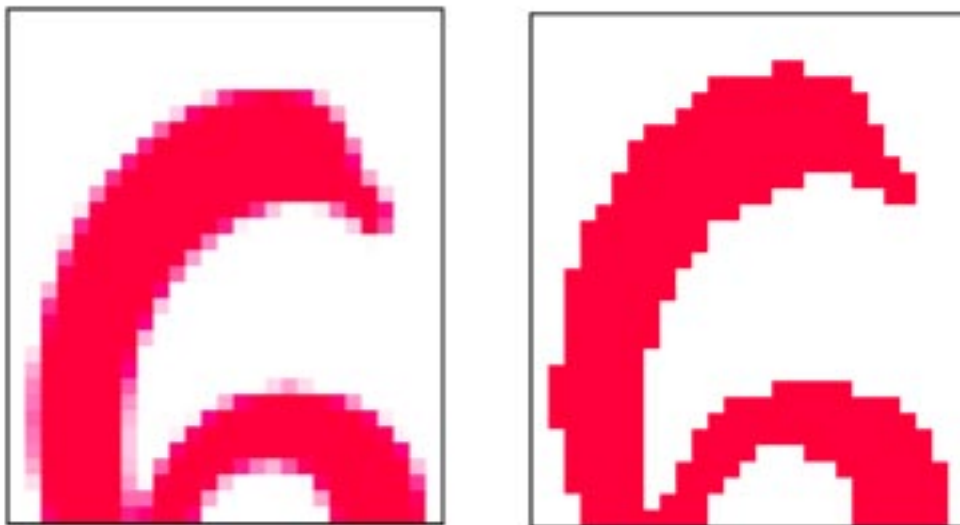
ANTIALIAS VS. ALIAS AND COLOR TABLES

There is a great way to compare the effects of antialias art and alias art by creating your own color tables for each. A color table is simply a group of colors, it's a palette. It is also 8 bit since you can only have 256 colors in the table. This is the same as the palettes we used for creating a gif, adaptive, selective and perceptual. Indexed Color Mode creates an 8 bit document in which you can specify the number of colors, use the exact colors in the image up to 256 colors, and apply dither if applicable. Every time you convert an image to Indexed Color Mode a color table is also created. Indexed images are different from RGB images. Besides from being smaller files, you cannot perform all Photoshop functions on an Indexed image. It is also a mode that is used for multimedia work in such programs as Macromedia Director and Adobe Premiere. We will use it to create color tables that can then be used for multiple images or as color palettes such as swatches to create artwork.

First of all what is alias and antialias. Alias is when the edge of type, a shape, or an image does not have any blending pixels to make the edge look smooth and blend with the background. Antialias art has blending pixels along the edge so that it looks smooth and blends into the background.



Make a shape with the lasso tool set to alias in the options bar by unchecking Anti-aliased and fill it in with a color. Next to it make a shape with the lasso tool set to antialias in the options bar and fill it in with the same color. Zoom In on these two shapes and examine the edges to see what color they are. In this example you would see varying shades of pink and white on the edge of the anti-alias image. As you can see from this example although anti-alias art looks better, it will also produce a larger file due to the increased number of colors.

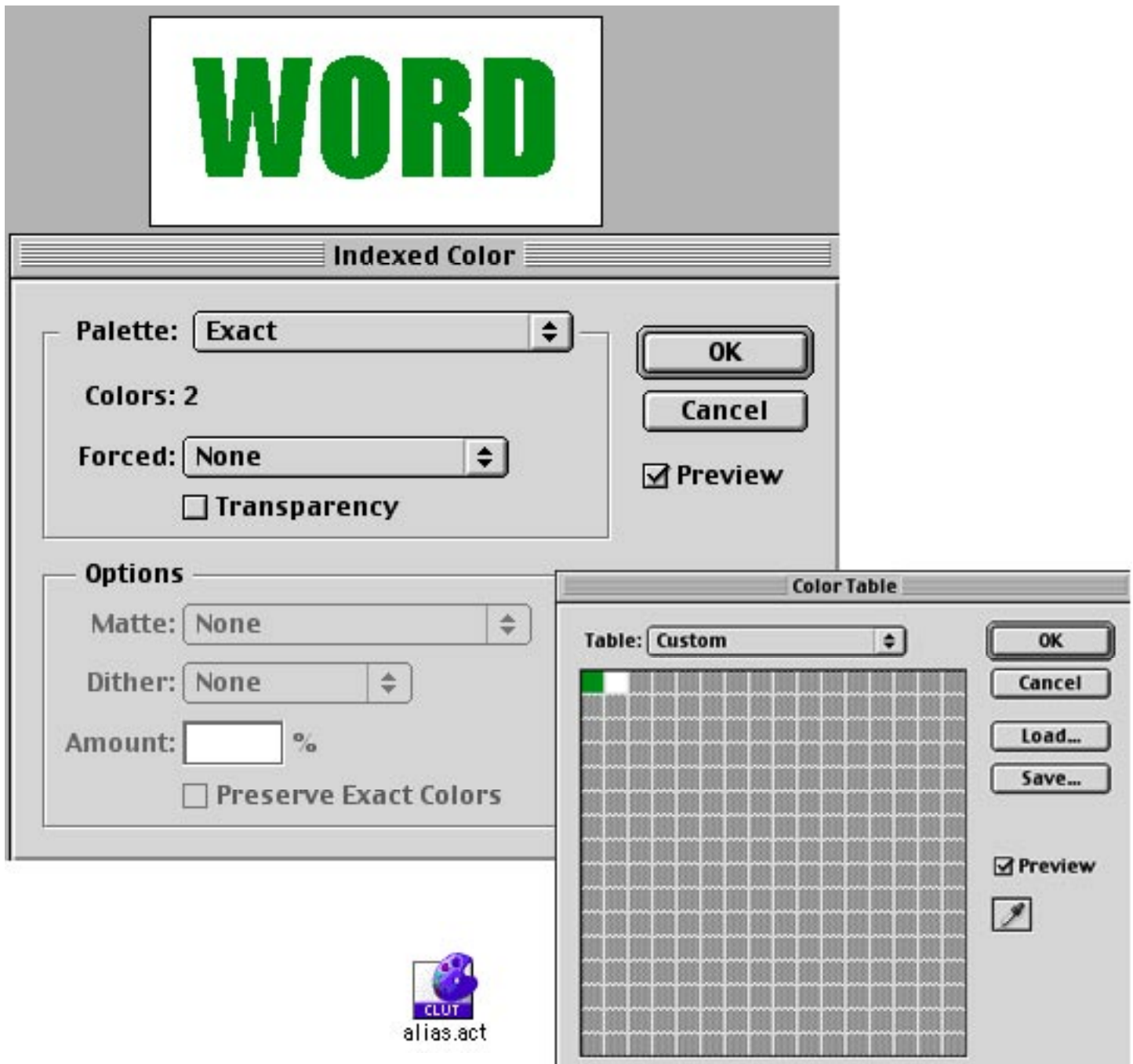


Enlargement of a detail from above images shows how this principle works.

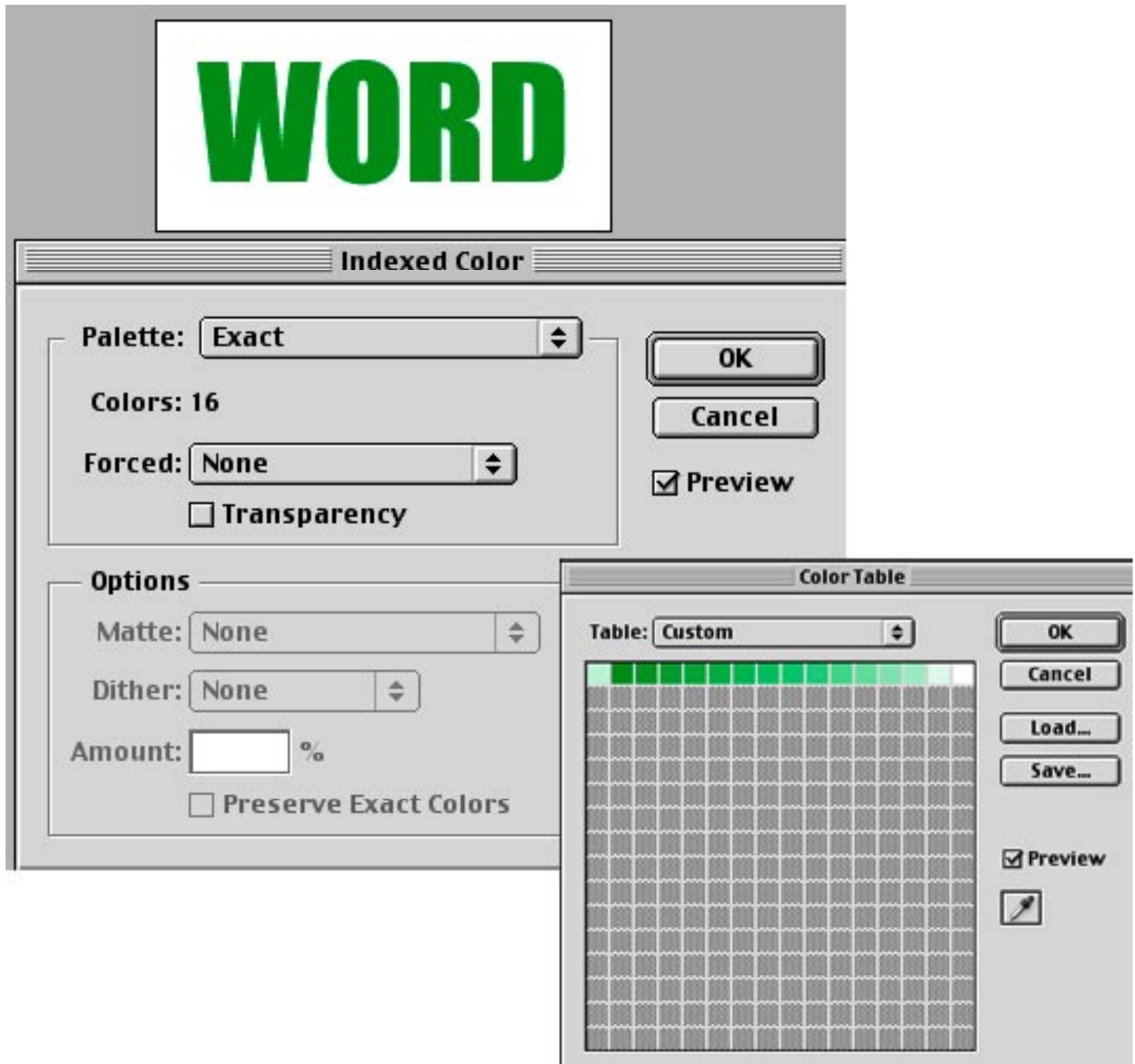
Now let's apply this to text and make a color table. In Photoshop. I typed "Word" in green with None set in the Options bar. This means alias or no anti-alias.



I then saved it as an Indexed file. Indexing is a way to save the exact colors of your document to a color table. It also allows for other optimization settings. To do this in Photoshop go to Image > Mode > Indexed Color... It is OK to flatten your image. Indexed Color shows you that you have exactly two colors in this image, green for the text and white for the background color. Click OK and go back to the menu Image > Mode > Color Table to view the colors in this image. Saving your color table allows you to use it for other images or as a swatch palette. You will end up with a document that has .act after the name (viewed below). This document can be loaded as a Color Table or a Swatch Palette but you cannot open it as an image.



Here is the same technique but in this example the “Word” was typed with anti-alias turned on. You have a choice of four anti-alias settings: Sharp, Crisp, Strong or Smooth in the Options bar for the type tool. Notice how many shades of green to white exist. Each anti-alias setting will produce a different number of colors.



To use the saved color table you must either index your image and load the color table you created or you can load it in ImageReady as a Color Table or you can use it as swatch colors by loading it into the Swatch Palette.

WHEN TO USE TYPE WITHOUT ANTIALIASING Some folks use antialiasing for all text on the web. I think that smaller text should be alias for better readability. HTML is alias text. You may want to use alias type to create the look of text in a browser. Use Helvetica, Arial, or Times. This is especially useful to show a client what the finished page will look like in the browser when the HTML text is displayed.

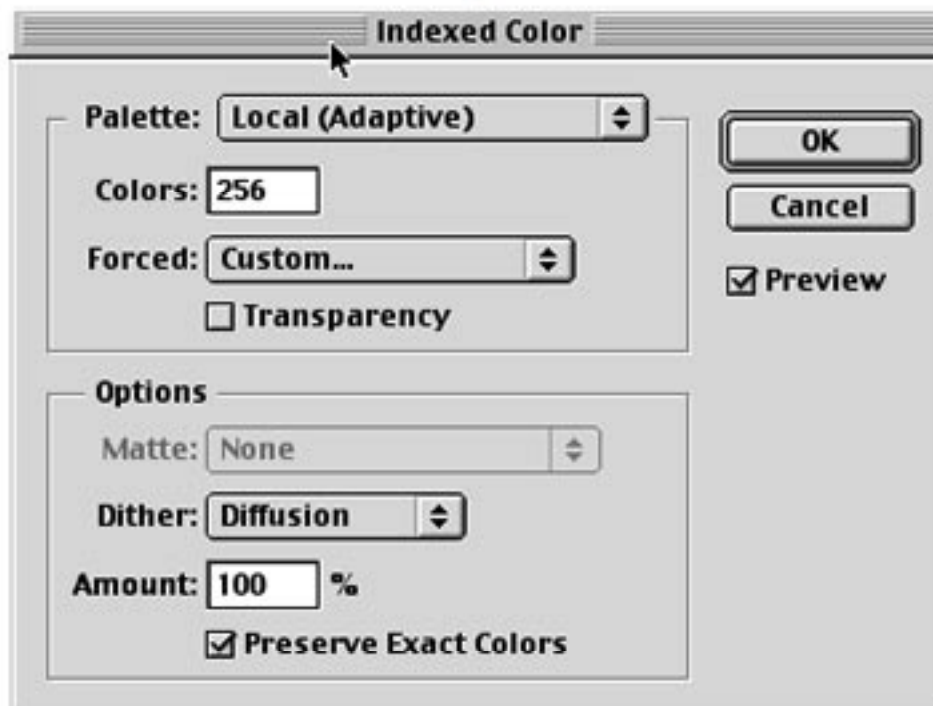
OPTIMIZING TEXT All text produced in Photoshop or ImageReady to be used on the web, needs to be optimized to a jpg or gif if it is treated as an image. Antialiased text will produce a bigger file than aliased text due to more colors.

CREATING A COLOR TABLE FROM A LOGO

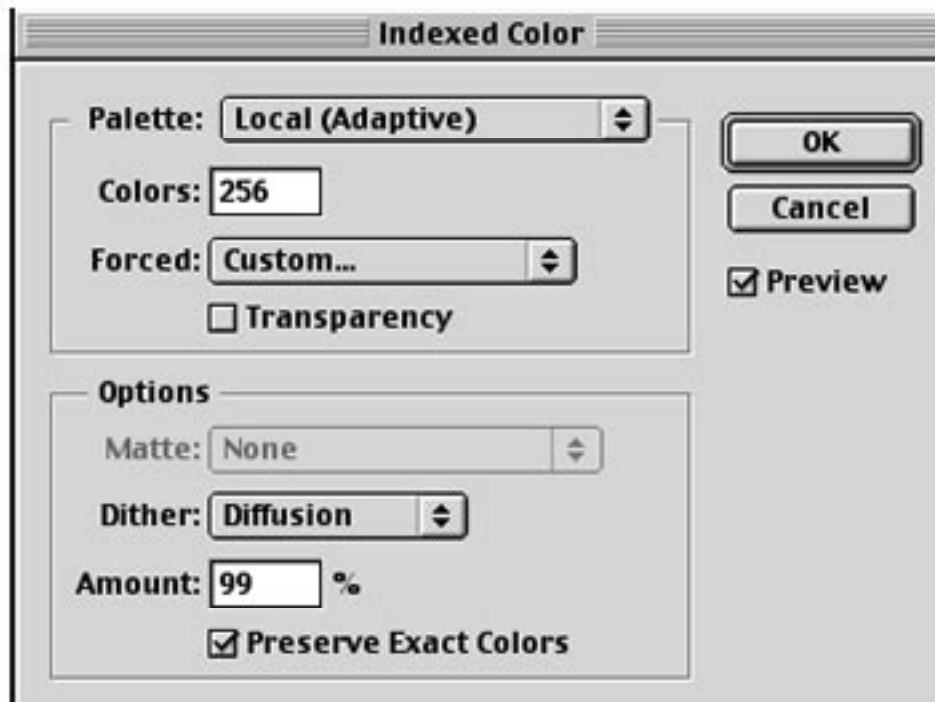
What if you have a logo and you want to use it as the basis for the colors on a website? Then you will need to make a color table from the logo. This allows you to design the website around a given logo by coordinate the colors of the logo to the website. First you need to make the color table to use. You can do this in both Photoshop and ImageReady. We will look at both methods.

USING PHOTOSHOP TO CREATE A COLOR TABLE

This is done the same way we did the text document “Word”. When the logo is changed to Indexed Color Mode, it looks best with dithering or else the gradations in the text and oval become banded (a striped pattern). But notice the dithering in the bird and rabbit. It is not acceptable. The amount of dithering can be reduced to eliminate this dotted effect in the bird and rabbit. Just lowering the dither amount to 99% takes away the dots. (see picture next page)



Here is the same logo indexed but this time with a 99% dither. There is still some dithering in the oval and the text but at an acceptable amount. Of course since this image has multiple gradation areas, a jpg might be a better choice for compression. But sometimes it is necessary to save a graphics as a gif. In this case, we are just trying to make a color table with the colors from the logo. The logo could still be compressed as a jpg and the color table used for other graphics on the website.

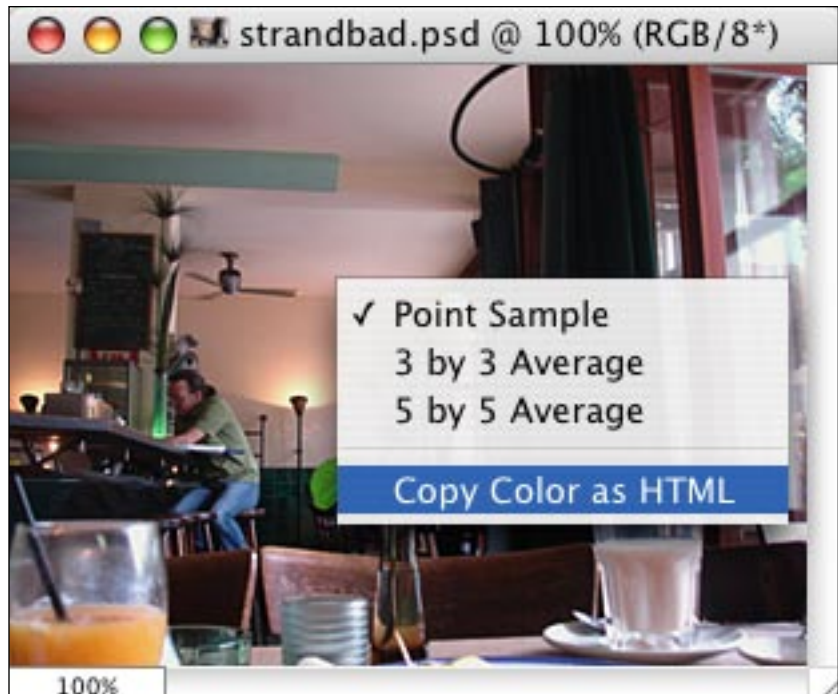


HTML AND COLOR

For those of you who are writing your own code or using a HTML editor, here is a technique by which you can copy a color as HTML in Photoshop or ImageReady.

With the Eyedropper tool click on an area of the image. Hold down the Ctrl key/Right mouse button and a menu will appear. Choose Copy Color as HTML. Then go to your code or HTML editor and paste. It will paste your code as below.

```
COLOR="#798888"
```



You can also sample a color and then from the Color Swatch palette go to the pop-out menu and choose Copy Color as HTML. Then paste it into your code.

