Photoshop & Flash: Optimizing Pixels and Workflow

With Michael Ninness

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Getting Photoshop Layers into Flash

The first time you try to import a layered Photoshop file (.PSD) into a Flash (.FLA) document, you might be surprised at the results. Flash MX 2004, and all previous versions, does not actually know what to do with .PSD file. The only thing it can import is the flattened composite version of the file, and that only happens if QuickTime is installed on your machine. Fortunately, there are several workarounds you can use to get all those layers in Photoshop into Flash. Five possible workarounds are summarized below.
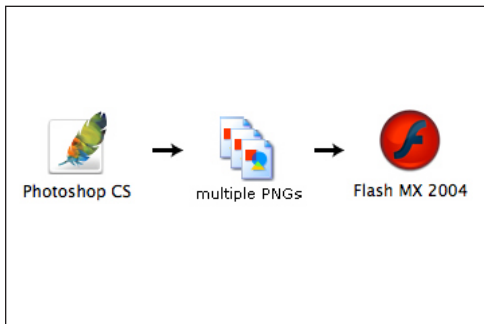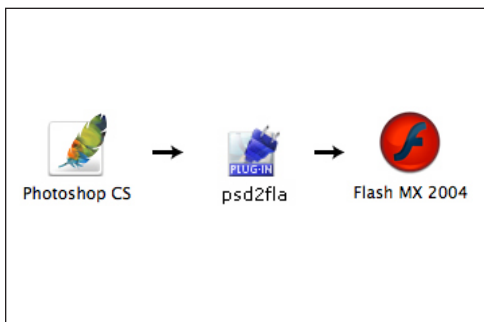

Photoshop to PNG

Each layer in the PSD needs to be exported from Photoshop as a separate PNG file to preserve transparency. Each PNG is imported into Flash, converted to a symbol and placed on a separate layer. You can automate this process with the File > Export > Layers as Files command in ImageReady CS and higher.
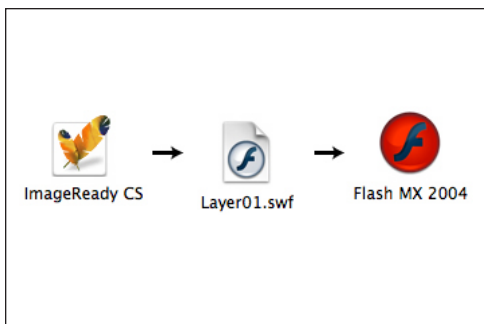
ImageReady to SWF

Use the File > Export > Layers as Files command in ImageReady CS or higher. Each layer is exported as a separate SWF. Then import the SWFs into Flash where each SWF will end up on its own layer. Slices, image maps, and rollovers are lost.
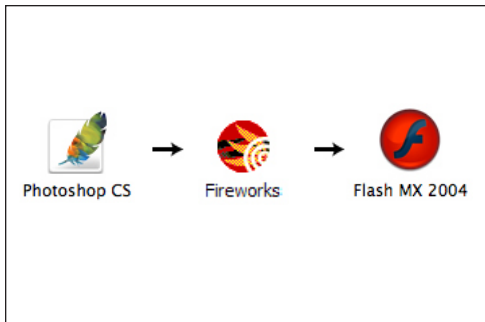

PSD2FLA

This is an export plug-in for Photoshop that exports multi-layered PSD files as an FLA file with all layers intact, ready to animate. Position and Layer names from Photoshop are retained. The plug-in works with Photoshop versions 4 and higher. (www.medialab.com/psd2fla)
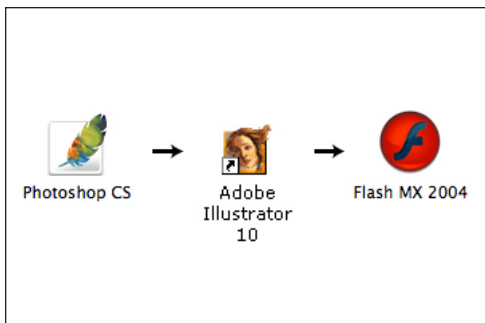
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Fireworks

Another alternative is to open your PSD files in Fireworks. Fireworks retains most of the original Photoshop file, including keeping text editable. Flash can import a Fireworks file directly, and it maintains an Edit Original link to the Fireworks PNG file.

Illustrator

Another alternative is to open your PSD files in Illustrator 10 or higher, which will convert PSD layers to AI layers. You can then export the AI file as a single SWF where each AI layer becomes a frame, or you can export each layer as a separate SWF file and import them into Flash.

Creating a Bitmap Rollover Button in Flash

I want to create a button from one of my small image thumbnails. I want the thumbnail to be semi-transparent in the Normal state of the button, and to be 100% opaque in the Over state. This gets a little complicated, because in Flash, you can't change the opacity of a bitmap directly -- you have to change the opacity of the Symbol (container) that the bitmap is in. What? Read on for the steps:

Step One: Select the bitmap on the Stage that you want to turn into a button.

Step Two: Choose Modify > Convert to Symbol, (or press the F8 key). Choose Movie Clip and give the Symbol a name. What you've done here is to wrap the bitmap in a container that can be animated or have its Alpha (Opacity) value changed.
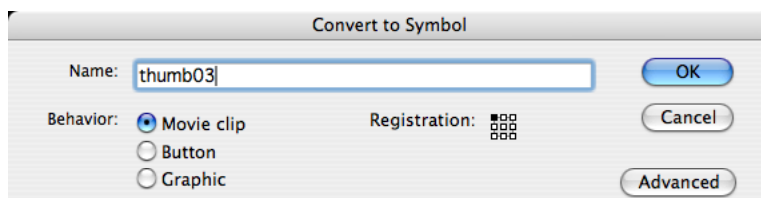
Step Three: Now, we are going to place the resulting Movie Clip into a Button Symbol so that we can create different button states for it. Press the F8 key again, and this time choose Button as the Symbol behavior and give it a descriptive name.
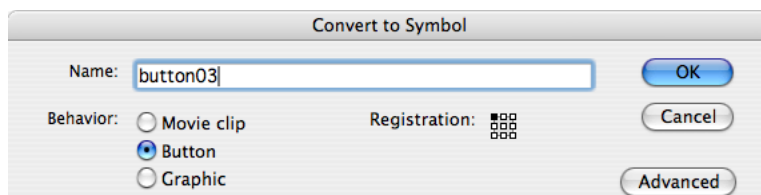
Step Four: Double-Click on the Button Symbol you just created on the Stage. This will open the Button and reveal button states in the Timeline. By default, there will only be a keyframe set for the Up (a.k.a Normal) state. Click on the frame for the Over state, and duplicate the contents of the Up state into the Over state by pressing the F6 key. (This is the keyboard shortcut for inserting a new Keyframe.)

Step Five: Click on the keyframe for the Up state, then click on the thumbnail image on the stage (this is the Movie Clip Symbol inside the Button Symbol). In the Properties palette, change None to Alpha from the Color pop-up menu, and change the Alpha value to 25%.

Step Six: Click on the Scene 1 link at the top of the Timeline to exit the Button Symbol and return back to the Stage. Go ahead and test your movie by pressing Cmd + Return and test your button in the resulting window. You should see it pop into 100% opacity when you roll over it, and return back to 25% opacity when you roll off of it.

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Loading External JPEG, PNG or GIF Files

One effective way to control the file size of an exported SWF file is to keep your large bitmap files separate from the main SWF, and only load them in when the user needs to see them. You can accomplish this by using one of the default Behaviors in Flash.

Step One: You need to create a place-holder Movie Clip. In other words, you need a container that the image(s) you are going to load can go into. In this example, I created a rectangle with no fill and a stroke color that is the same color as the Stage. I selected the rectangle and converted into a Movie Clip Symbol. One thing to note is that I've made the rectangle the same size as the images I plan on loading into it. This means the image will come in at its actual size and be placed exactly in the same position as the place-holder container. Matching the size of the images is not a requirement — if you are adventurous, you can change what happens to the image when it gets loaded into the place-holder container through ActionScript.

Step Two: After you've converted the rectangle into a Symbol, it is very important that you give the Instance of the Symbol that is on the Stage an Instance Name. Any object that you want to control through ActionScript must have a unique Instance Name. Select the Symbol on the Stage, and then name it in the Instance field of the Properties panel. In this example, I've simply named it "container", without the quotes.
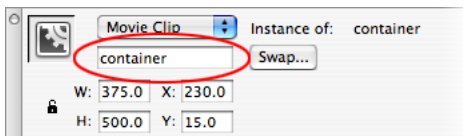
Step Three: Select the Symbol that you want to use as your "trigger" object. That is, the object you will click on in the exported SWF file to trigger the loading of the external image file that you want to pull-in. In the Behaviors panel, click on the plus (+) icon and choose Movieclip > Load Graphic.
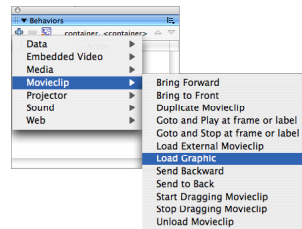
Step Four: In the Load Graphic dialog box, enter in the URL or path to the external image file you wish to load. Choose the movie clip into which to load the JPEG into — in this case, you would choose the "container" movie clip.
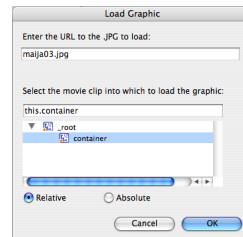
Alternative Approach: The Load Graphic Behavior is essentially adding the necessary ActionScript code to the trigger object for you. A cleaner approach (i.e. less code) is to select the trigger object, open the Actions panel (F9), and type in the ActionScript code below. You would replace "container" with the name of the place-holder movie clip you are using, and "picture03.jpg" with the URL to the image you want to load.

```
on (release) {
    container.loadMovie("picture03.jpg");
}
```

Tips for Working with Pixel-Based Images in Flash

Don't resize images in Flash

Always bring your images into Flash at the actual size (pixel dimensions) you intend to use them at. Anytime you scale an image on the Flash state, it will be resampled and interpolated. Photoshop does a much better job than Flash when it comes to resampling. The only exception to this rule is when you are animating the scale of an image. Of course, in that scenario, it is always best to bring the image in from Photoshop at it's largest size in the desired animation.

Resolution does not matter

Many web designers out there still believe that their web graphics must have a resolution of 72dpi. Turns out, resolution is only relevant when you PRINT a graphic. When working with a graphic that will be displayed on a monitor of any kind, you only need to worry about pixel dimensions, not resolution. Don't believe me? Try this: Open the New Document dialog in Photoshop and change the dimensions to 800 x 600 pixels. Then, change the resolution from 72 dpi to 600dpi. See how the file size does not change at all?
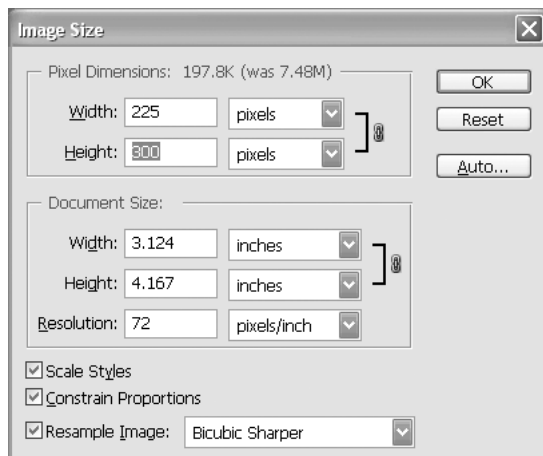
Use Bicubic Sharper

Most images you intend on using in your Flash project will need to be downsampled with Image Size command in Photoshop. This dialog box is split into to parts; an "upstairs" for web designers and a "downstairs" for print designers. Notice what is not in the upstairs area? That's right, there is no Resolution field! If you can't select the width or height fields in the upstairs area, it's because the Resample Image checkbox at the bottom of the dialog box is turned off. Turn it back on, and you'll now be using the Image Size command to resample an image instead of resizing it. As a reminder, Resample changes the number of pixels in an image (and the file size). Resize means you are simply changing the print dimensions and resolution without changing the actual number of pixels in the image. The default "resampling algorithm" in Photoshop is Bicubic. For better results, use Bicubic Sharper when downsampling an image. Bicubic tends to make images get a bit soft whereas Bicubic Sharper preserves more of the original detail.

Stay on the pixel grid

Always use whole pixel values for the X and Y position of your images as sometimes you can end up with weird "pixel-shifting" in the exported SWF file if your images are not aligned to the pixel grid in Flash. You can force Flash to help you stick to the grid by choosing View > Snapping > Snap to Pixels. Choose this menu command before importing images to the Stage as it is not retroactive. That is, if an image is not on the pixel grid before you choose the Snap to Pixels command, Flash does not automatically shift the image back to the grid. You'll need to select the image and manually change the X and Y values in the Properties panel. Once this command is turned on however, you can use the arrow keys on your keyboard to nudge images on the stage in exactly one pixel increments and know that they will stay aligned to the pixel grid.

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Controlling Bitmap Optimization in Flash
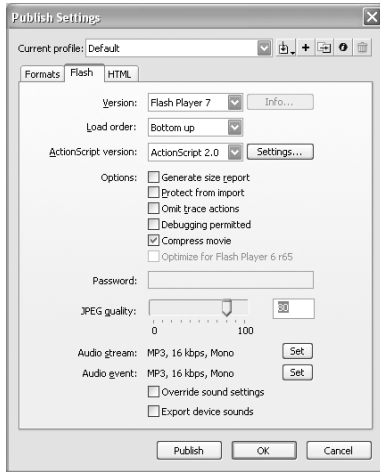
Publish Settings

By default, when you import a PNG file into Flash, it will not export out in the resulting SWF file as a PNG—rather, it will be exported as a JPEG instead. Because JPEG is a lossy-compression file format, the image quality will go down. The default JPEG quality setting used for ALL imported PNGs can be changed by choosing File > Publish Settings, clicking on the Flash tab and changing the JPEG Quality slider. See below if you want to control the optimization settings for each bitmap independently.

Import JPEGs for best results

The JPEG optimization engine in Flash, to put it politely, isn't that great. You will get much better and predictable results by saving your images as JPEGs from Photoshop instead. While that does mean more work for you, the good news here is that a JPEG imported into Flash goes out in the resulting SWF file exactly as it came in. That is, an imported JPEG does not get recompressed when you publish to a SWF.

Per-object compression

You can always override how Flash optimizes imported bitmaps on a per-object basis. To do so, you simply double-click on the image you want to change in the Library panel to open the Bitmap Properties dialog box. If you select a JPEG file, you can force it to recompress at a lower quality setting, and thus reduce its file size further. If you select a PNG file, you can force it to export out as a PNG so the quality does not change, or you can choose a JPEG quality other than the default setting specified in the Flash tab of the Publish Settings dialog box.

notes

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Channel-Based Optimization in Photoshop

Have you ever wished that you could control the optimization settings of two different areas in a single image independently? For example, in the image used here, I care more about the couple's faces than I do about the background. It would be cool if I could keep the quality very high around their faces, but reduce the file size of the background much smaller. Here's how you do it:

Step One (Create a New Channel): Choose Window > Channels. Click the New Channel button at the bottom of the Channels palette. Click on the eye for the RGB channel so you can see your image and the new alpha channel at the same time.

Step Two (Paint a Mask): Press the B key to select the Brush tool. With a soft-edged brush, paint with white on the areas you care about the most. In this example, I painted around their faces. When you are done, click on the name of the RGB channel, and turn of the eye for the Alpha 1 channel.

Step Three (Save for Web): Choose File > Save for Web (Cmd+Option+Shift+S) [Ctrl+Alt+Shift+S] and choose JPEG for the file format.

Step Four (Modify Quality Setting): Click on the tiny button to the right of the Quality field to open the Modify Quality Setting dialog box. Choose Alpha 1 from the Channel pop-up menu. The black slider sets the quality value for the areas defined in the black portion of the mask and the white slider sets the quality value for the white areas of the mask. You can now control the optimization quality for each area separately. When satisfied, click the OK button and save the file.

Can I get consistent web colors?

All signs point to yes.

By Michael Ninness

PREVIEW CROSS-PLATFORM WEB GRAPHICS ACCURATELY WITHOUT THE USE OF A MAGIC 8 BALL

I f you use Photoshop on a Macintosh to create your Web graphics, you've probably noticed that the graphics appear a lot darker when viewed on a Windows machine. And you may have also noticed that your image colors look different in Flash than they do in Photoshop.

Well, it's true that Macintosh and Windows displays do look different, with Windows displays being darker than their Macintosh counterparts. That's because the two platforms use different gamma values. While there isn't anything you can do about this gamma issue, you can change how you work in Photoshop to at least preview what a graphic created on a Mac but viewed on a PC will look like.

Let's look at the two settings in Photoshop that affect how a graphic for the Web can be previewed—Color Settings and Proof Setup/Proof Colors—then we'll show you how to compare Mac and Windows previews.
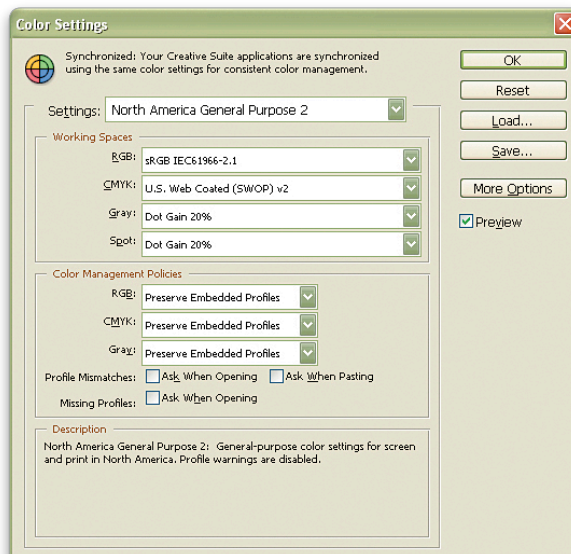
COLOR SETTINGS

First, go under the Edit menu and choose Color Settings to bring up this dialog.

STEP ONE: Look under Working Spaces at the RGB setting. The default working space for RGB images in Photoshop is sRGB. This is the same color space that most display manufacturers adhere to as well. Viewing images in the sRGB space while working in Photoshop is as close as you can get to predicting what they'll look like on a webpage or in a Flash (SWF) file.

If you've changed the RGB working space to something else for a different output destination, you should change it back

Default settings

Before

After Proof Colors turned on

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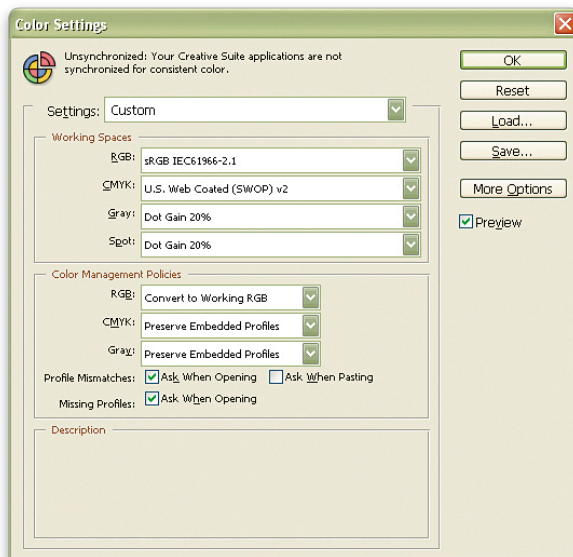
to sRGB while working on Web graphics.

Note: You might consider setting up Actions to switch between working spaces if you use this feature often. *[NAPP members may download the actions mentioned in this tutorial from www.photoshopuser.com/members/ magcenter.2006.php.]*

STEP TWO: Under Color Management Policies, click on the arrow to the right of RGB and select Convert to Working RGB from the drop-down menu. If you completed Step One above, then this will convert all the images you open into the sRGB working space.

This is also very important in a Photoshop-to-Flash workflow as Flash doesn't support any embedded profiles other than sRGB. In other words, if you're working in the Adobe RGB color space and then choose to embed the Adobe RGB Color Profile when you save the file, when you place the image in Flash, the Adobe RGB profile is ignored and Flash essentially displays the image as if it had been saved with an sRGB profile instead. That's what's causing the colors to look like they've changed. If you force your images into an sRGB color space in Photoshop, they'll look the same when you place them in Flash later.

PROOF COLORS/ PROOF SETUP

This is the other "gotcha" area that can skew how images are displayed onscreen.

STEP ONE: (You'll need to have an image open for this step.) From the View menu, choose Proof Colors to select it (shortcut is Command-Y [PC: Control-Y]) and a checkmark appears beside it. This will change how images are displayed onscreen and it's basically an onscreen soft proof of the specified output destination. You might notice that the image looks dramatically different after turning on Proof Colors. Don't worry. We'll make it look right in the next steps.

STEP TWO: Now look in the View>Proof Setup menu and notice that by default,
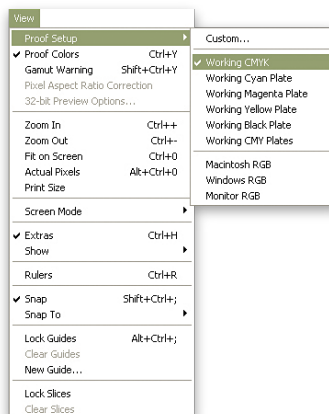
the Proof Setup is set to Working CMYK (it has a checkmark beside it in the list).

STEP THREE: As you might have guessed, Working CMYK isn't the right Proof Setup choice for a Web workflow. Instead, choose Windows RGB from the View> Proof Setup menu. Yes, that's correct even if you're creating graphics on a Mac—actually, especially if you're creating graphics on a Mac—because the vast majority of the intended viewing audience will most likely be viewing your images on a Windows machine.

Tip: You can change the default for Proof Setup in Photoshop with no document open. Just choose View>Proof Setup>Windows RGB.

COMPARING MAC AND WINDOWS PREVIEWS

Proof Settings is a command that can be set differently for each open document. Here's a way to preview how your image will look on both a Mac and Windows monitor at the same time:
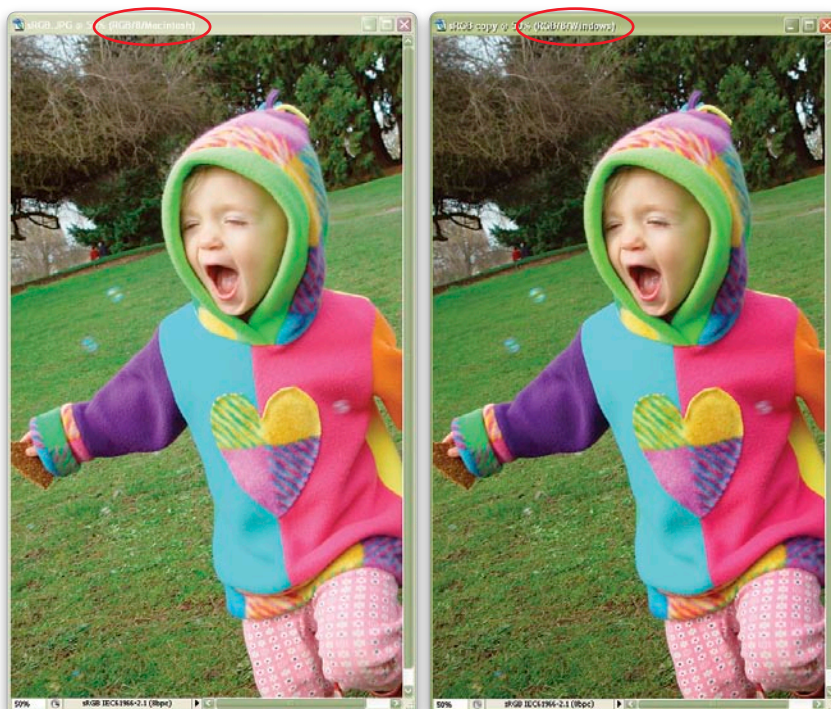
STEP ONE: Duplicate the current document (Image>Duplicate). Then choose View>Proof Setup>Macintosh RGB. This will show you how your image will look on a Mac monitor.

STEP TWO: Click on your original document and choose View>Proof Setup> Windows RGB to preview how your image will look on a Windows monitor.

STEP THREE: To get real fancy, you could also tile the windows (Window> Arrange>Tile Vertically) and match their Zoom and Location (Window> Arrange>Match Zoom and Location).

And, of course, you might have guessed that you can also set up an Action to do this for you as well.

Note: If you're working in ImageReady, the equivalent command for the Photoshop Proof Setup/Proof Colors is View> Preview>Standard Windows Color. ■ ▭

Michael Ninness is Executive Director at Lynda.com, an education provider of video-based training, books, and events for creative professionals. He's author of many video-training titles including Photoshop CS2 & Flash 8 Integration *and* Photoshop CS2 Essential Training *(www.lynda.com).*

With Windows RGB Proof Setup

Mac RGB (left) and Windows RGB (right)