

Aquarium Photography Part 3

The next article in the series was going to be my process for setting up and executing a photo session. I have had several requests though asking how to process the images that we are taking. I will still address the original article at a later time, but since most of us are already taking photos, I thought I would go ahead and do the post-processing article first.

This always comes up with digital photography and post-processing (PP). Is it cheating to use a photo editing program to modify your pictures? I would say no, it isn't cheating. It is just a tool. It still takes a good photographer to take the image. If the exposure or focus is off there is only so much you can do to fix it and most of those shots are decent at best. I think it is "easier" to do on the computer than what you do in a darkroom. Usually it is the hardcore film guys that think it is cheating. Push/pull film, filters, dodge, burn, color washes, etc. Those are all film techniques applied by the photographer and/or lab to alter the image. Is that cheating?? It is really a stupid argument. Some folks go overboard on PP and the pictures reflect that. If the first thing you notice is the PP then you really didn't accomplish your goal in capturing an image. It is the nature of the digital beast that the images need some PP. Some people will say I don't touch my pictures they come right out of the camera that way. Yes and no. They don't come out that way on their own. Anytime you have a jpeg version of an image it has been PP by the camera. Sharp-

ening, color, contrast, and saturation have all been applied by the camera. Most DSLR have several sets of parameters from which to choose. In addition, you can usually set up some custom parameters as well. Without the PP the pictures would be relatively "flat" looking. RAW images on the other hand have no processing done to them at all. These require a few more steps and a little more time to PP, but the amount of data available to you make it worth it in my opinion.

Before we begin, let me outline my basic workflow. This is just a shell and at times I will deviate from it, but it serves me well the majority of the time.

- I download all the images from the camera and take a quick look at them. I delete the obvious ones right away. Poor composition, out of focus, etc. I then copy all the remaining images to a disc. This basically keeps them as a "digital negative". I always have the original shots if I need them.
- I then convert the RAW files into images. I might do some basic cropping at this stage as well.
- Here I will make adjustments such as black level, white point, middle tones, color adjustment, and saturation. This would be where I would take care of imperfections such as blemishes, scratches, dust, etc.

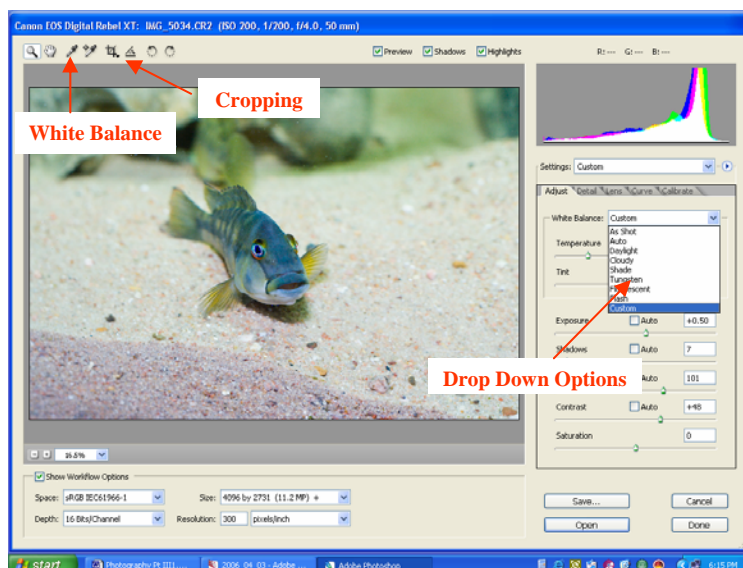
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- This would be the step that would involve more advanced and time consuming corrections. Ideally the images don't need much if any of this!!
- Finally I will save the files and get them either to the web or a lab for a printed copy.

I shoot RAW and will begin with that step of the process. Photo-editing software can't work with RAW files, so they must be converted first. RAW is convenient because changes can be made during the conversion mode as if they were shot that way with no degradation of image quality. The white balance (WB), exposure, and shadows are the options I usually touch here. There are a couple of ways to handle WB. You can attempt to match the WB while shooting or setup a custom WB, or change it in your conversion software. If I am doing a session with consistent lighting I will do a custom WB. This saves me some time later on in PP if this is right from the get go. It is no biggie to change it here; it just saves a few steps is all. WB isn't as big a deal in film, because lighting conditions were taken into consideration when you choose the film you will be using.

If you are going to change the WB you have a few choices. There is a drop down menu with several options such as As Shot, Auto, Flash, Shady, Tungsten, etc. You can play with these and see if any are to your liking. Basically what you are doing is attempting to eliminate any color cast in the photo.

After opening the RAW image, you can make some changes to the WB. Here are a few

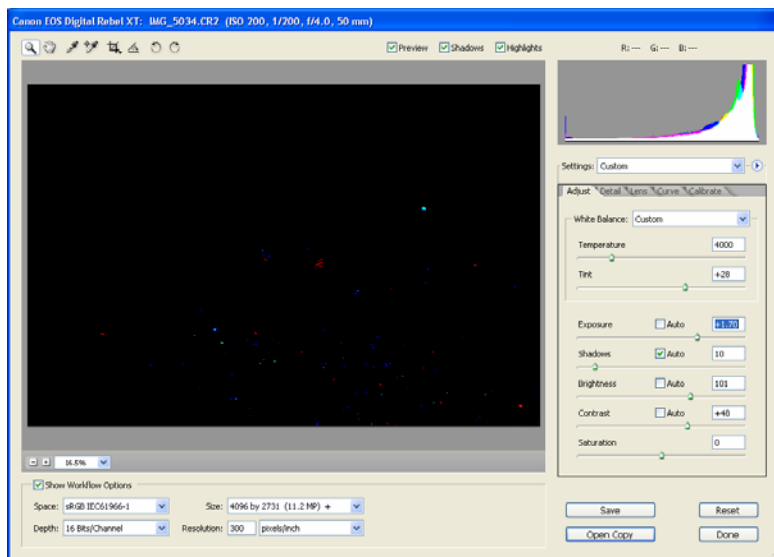


choices. There is a drop down menu with several options such as As Shot, Auto, Flash, Shady, Tungsten, etc. You can play with these and see if any are to your liking. Basically what you are doing is attempting to eliminate any color cast in the photo.

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You can use the custom option, which lets you adjust the temperature and tint of the light. There is also a WB eyedropper tool that lets you select an area of the image that is supposed to be neutral and adjust the rest of the image once you click on the neutral spot. This for me is the least effective unless you have planned for it. By planning for it I mean including a gray card in the photo and selecting the card. What is nice is you can place a gray card in the first image you take and then later on when doing your PP you can select that card with your eyedropper tool and then apply those settings to all the images with a batch process. Just something to think about when doing your photo session. Once again though in that case I would probably do a custom WB in the beginning of the shoot and use it for the rest of the pictures. For this particular picture I shot it without any WB adjustments. This was shot at Greg Steeves house and if you have been there you know that he uses regular fluorescent bulbs on his tanks. They are infamous for giving off a yellow colorcast, so that is what I will address first. I cycled through the presets and none of them looked very good, so decided to use custom WB. I moved the temperature towards the blue

end to get rid of the yellow. I adjusted the tint



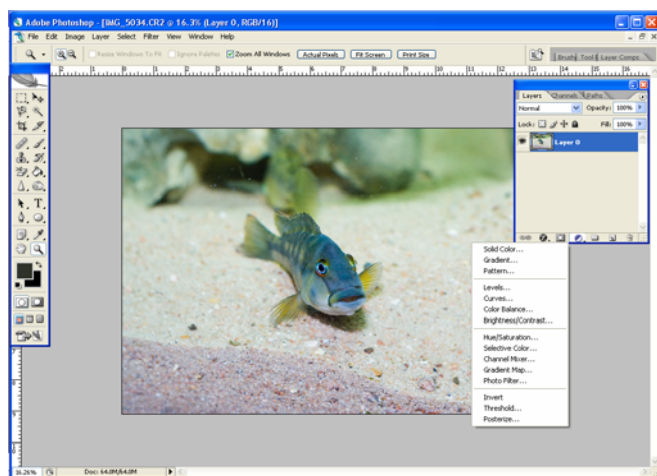
a hair and I was in much better shape immediately as you can see. So now that you have your WB set, let's move onto the exposure and shadows sliders. You can eyeball this if you want but I like to go at it a bit more precisely. You can look at your histogram and see what colors are clipping and where you might be losing some detail in the highlights or shadows. This is very intuitive for some, but not for everyone. I like to use a little shortcut. Click on the slider for exposure. Then hold the ALT key down and the whole preview screen will be black.

Any colored spots you see is where clipping is taking place in the highlights for a particular

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color channel. In the image above I have exaggerated the exposure slider to show this. I adjust the slider to the point right before the colored spots begin to show up. You have some room to go back and forth with the slider, but not extreme range. If your original picture is improperly exposed you can only do so much before you realize, crap, I can't save this image. Now I do the same thing with the slider for Shadows. I slide the bar a bit until right before colored spots start to show up. You have to analyze your image a bit at this point. If the shadows are clipping in an area that has no detail, such as a black background, you can have some clipping and it won't hurt you at all. If your image is a bit dark at this point, don't worry, that is easily corrected. You might be thinking that my original picture wasn't this dark, why did I make these changes. The goal here was to bring out details in the highlights and shadows that didn't show up originally. Now if an image is exposed properly dead on, there are many times you don't touch anything!! Next we move onto brightness and contrast. These are adjusted usually by sight and to the photographer's preference. The two sliders work together and some tinkering is involved to get it right. I keep these movements to a minimum myself. I take extra special caution with contrast. This is a control that is overdone quite often in my opinion. The problem is you crank up the contrast till it looks good and then you

mess with some other settings and go mess with contrast some more. Each time you change it the image looks good and then you get acclimated to it and decide it could be bumped up some more and then you are at an image that looks very edited to someone else and has very unrealistic contrast. I leave contrast to a later time and I will explain why at the time. This is usually the point where I stop the conversion process. Any other changes I will make in the editing program itself. I may do some cropping on some images, but not here. Above the tail to the left are some imperfections in the glass and I will look at them a little closer to see how tough they will be to fix and how that might effect my cropping of the picture. Now I will save a .tiff copy of the image. Then I will open it in my photo-editing software. I use Photoshop CS2 and love it. There are some other



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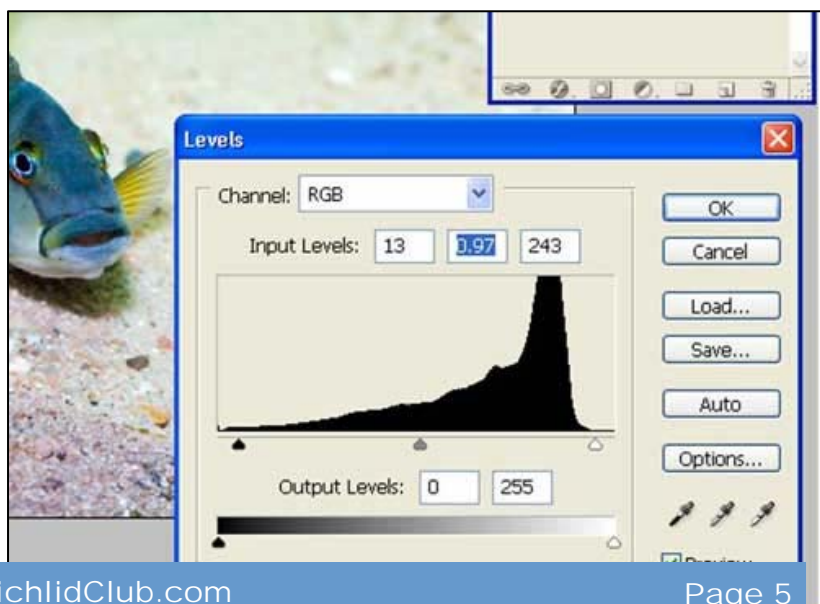
good ones as well. The one I would like to try is Aperture, but it is only for Mac OS.

So we have the image open in PS, what do we do? Before I get into the series of steps I will use in processing the image, let's have a brief discussion about layers. Many folks will start editing the image by choosing Image>Adjustments> (desired adjustment) from the menu bar at the top. These changes affect the images directly and cause what I call "pixel damage". When you start making changes, the underlying pixel value is altered. Once you start doing a bunch of these, it becomes difficult to undo any one change because you have to hit undo a bunch of times and lose everything else you have done. The original pixels are affected and you have lost your untouched image. What I use and recommend highly is to use adjustment layers. These can be found in a fly out menu on your layers palette.

When you use layers you are basically creating a copy of the image and making changes to that copy of the image. The layers start to build up, and often I will have 6-7 layers before I know it. If you don't like the changes you made in a particular

section, you can either delete a single layer or you can click on it again and edit it some more. These options aren't possible if you don't use layers. In addition, it is easy to see what changes have been made to the picture. Each layer has an eye icon that enables you to view the image with the layer and without the layer, so you get a direct before and after. The options available in layers are too numerous to discuss here and we will just be touching the tip of the iceberg in this article. We will be using the very basic functionality that layers offer, but in many cases this is all that is necessary.

Let's move onto the first adjustment that will be made. I usually like to touch Levels first. This adjusts the white point, black level, and

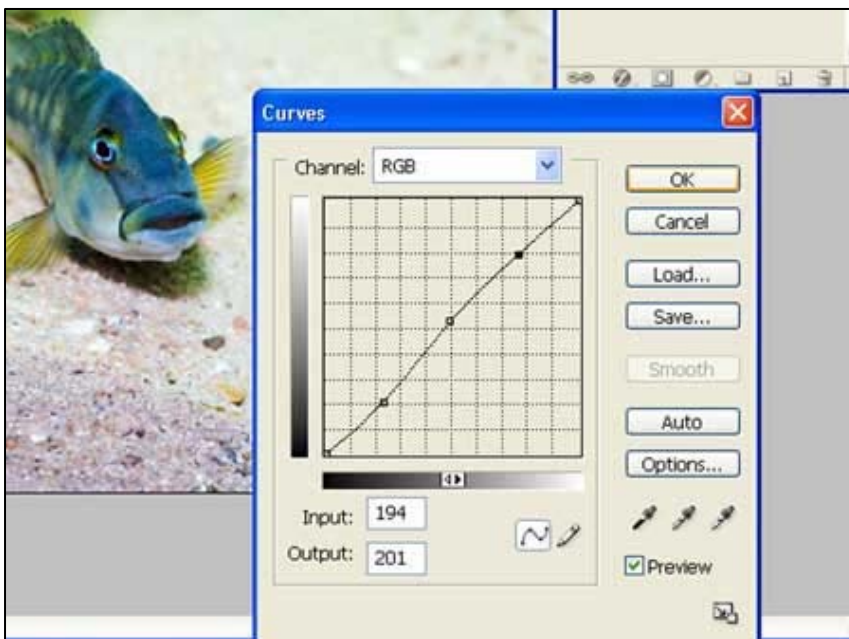


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midtones of the image. After you use the fly out menu to select the Levels adjustment layers you have a histogram with 3 triangles beneath that can be moved.

The basic adjustment I make is to move the end sliders first. The slider on the left represents your black level. The triangles initially are placed at the very ends and in the middle. I usually move this in to where the histogram starts, and you can see this in the above example. The slider on the right represents the white

achieve the desired tonal range. The middle slider represents the midtones and moving it back and forth will change the brightness of the midtones. Move this till the image meets your approval. There are no hard and fast rules here. You can manipulate the image any way you want, but 99% of the time these moves work for me. Hit OK and that is done. Once again if you ever want to go back and tweak the settings, you simply double click the layer. Often the different adjustments have a subtle affect on other layers and you



will need to go back and adjust accordingly.

The next layer I work on is Curves. I think Curves are one of the most difficult aspects of PP to master and understand and this lends them to being under utilized because it scares people away. Whole books have been written on Curves alone and how to use them. Curves can be used to enhance contrast and/or target certain colors. I use if for contrast myself.

point. I also move this in to the edge of the histogram. This is a very subjective step and the sliders can be moved any way you want to

There is a separate Contrast layer and many people use that instead of curves, and it works effectively, but I feel like curves offer much

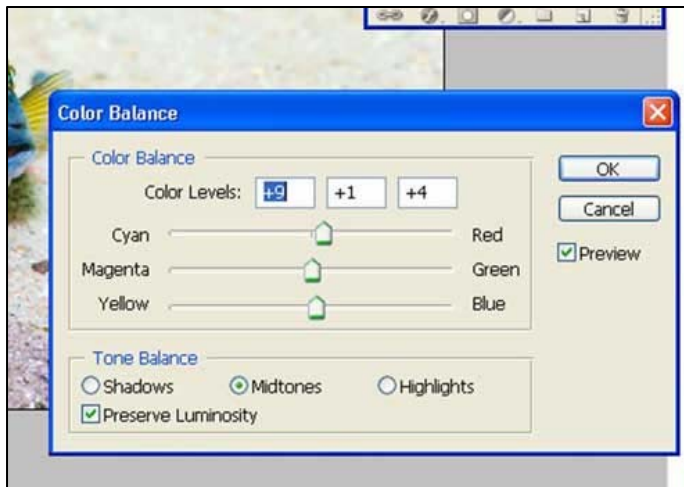
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more precise control.

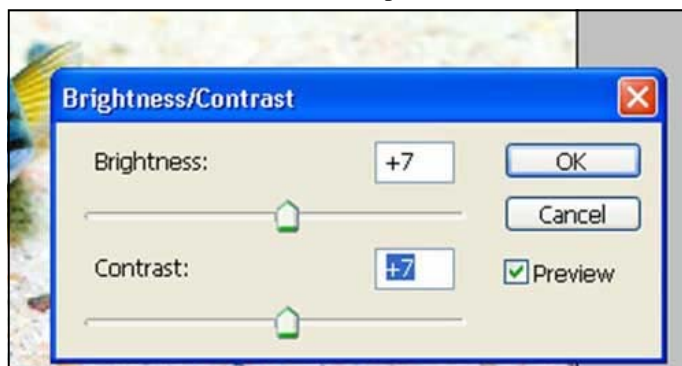
The lower left corner represents your dark tones and the upper right your bright tones. When you first open the line is straight and at a 45 degree angle. There are a couple of ways to attack the curve. You can click on a point on

curve. This will help you in making sure you are moving the correct section of the curve for the desired effect. In the majority of cases there is an easy curve that works wonders, the classic S-curve. On the lower portion of the curve pick a spot on the curve that is about 20% in from the edge. Each grid line represents about 10% of the image range.

Do the same thing in the upper point of the curve as well. Bring the upper point to the left a tad and bring the lower point to the right a tad. Grab the middle of the curve and move it up or down a bit and bam you have a much-improved contrast in all ranges. I usually use this as a starting point and tweak a bit from there. Since I was pretty happy with the contrast already the S-curve is barely visible, but the slight changes to improve it a little bit. As with any adjustment, if you get too carried away you can always hit cancel and start over again. Don't be afraid to experiment a little.



the curve and it creates an anchor point. This locks that part of the curve down. When you make changes to other parts of the curve, the anchor point will not move but everything else will in attempt to keep a smooth curve. If you really need to keep a certain part of the curve in one spot, I would use several anchor points to keep a larger portion of the curve where you want it. In addition you can click on the image and a marker will show the corresponding point on the



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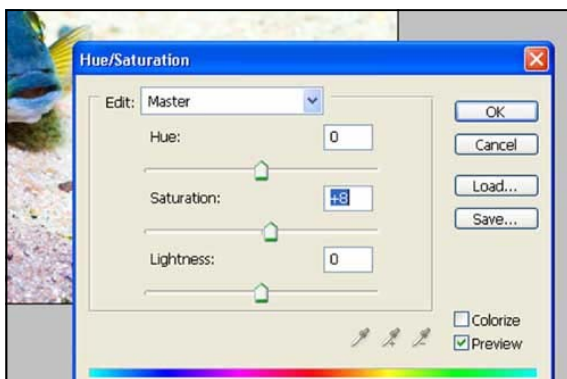
Next we will move onto Color Balance. Once you select this adjustment you will be presented with a dialog box that has 3 sliders on.

Each slider has 2 colors associated with it. These are used to remove any colorcast you may have left in your image. I don't use this one too much, as I hope I am on with my colors. It doesn't hurt to look at it and see what affects it has on your image. The best way to use this tool is to move the sliders to the extreme ends and see what it does. Then slowly move them back in until you reach a pleasing look. Often you will find you are pretty close to 0 if your image was dead on. A couple notches either way is no big deal and can add a little pop to the picture. This isn't going to add any colors that weren't there before, but will remove some undesirable tints. The thing to remember this is a global adjustment. You might be thinking this will really enhance a certain color in the fish. It will do that but it will change the whole image as well. Your Red Peacock looks great now,

but that gray piece of holey rock has a reddish tint now as well. Use with a little caution is all I would say with this tool.

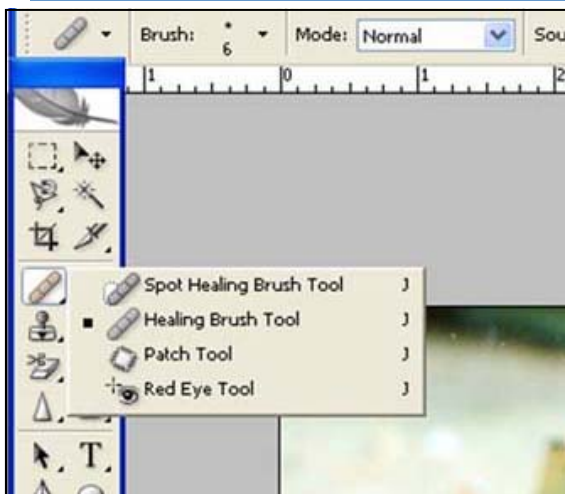
Now we move onto a dangerous adjustment layer. That would be the Brightness/Contrast layer. Like I mentioned earlier I feel Contrast is a tool that is over used and gives many images a very fake look. The dialog box presents a slider for each adjustment (Below).

The 2 sliders work in conjunction. A move of one slider usually involves touching the other.



I hit the Brightness one first. This is usually very minor, as I have hopefully nailed it through the use of curves and levels adjustments. The same goes for Contrast. I might give a couple quick moves and see how it looks. Now if you opted to not play with Curves you will spend a bit more time with this adjustment layer. I would make the moves you feel comfortable with and click OK. In this example I gave each a very slight boost. There are times when these sliders will

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play a much bigger role. I would then toggle the eye on and off to see if your adjustments had the desired affects.

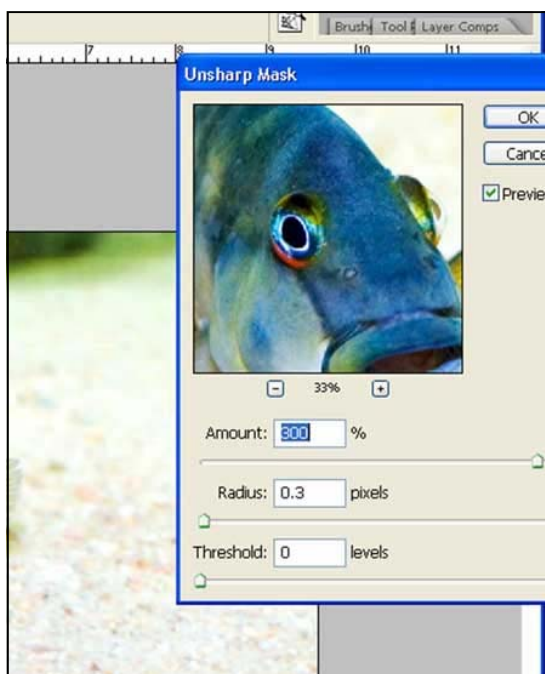
The next adjustment can be a source of trouble as well. That would be the Hue/ Saturation adjustment.

It doesn't take much to over do this and have a picture with some pretty, but unrealistic color. This is another would I would adjust in steps and toggle the eye icon on and off to get it right. I have a hard rule that I follow. Do not ever move the Saturation past +20. It is not very much and many people go way past that and that is fine and their choice. I want accurate color representation and often I keep it under 20. To my eye anything over that looks a little too science fiction for me. In addition to affecting the entire image, you can choose separate color

channels and only affect specific colors that you feel would benefit. I am not sure I have ever touched the Hue slider.

Next I want to crop the image. I really liked the shallow depth-of-field in this image and thought the fish had an interesting head. I decided to crop out the empty tank space and really focus on the fish and his head. This is the resulting crop.

Now it is time to make any corrections to flaws. There were quite a few water spots on the tank glass. My favorite tool for this kind of problem is the spot healing brush. It is



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wonderful for fixing small imperfections, especially if the flaw occurs in an area of one color. I zoom in on the area that need correcting and choose a brush size that just covers the area I need to fix. One click of the mouse and bam, it blends in seamlessly. There are countless tools

and techniques to fixing problem spots and each one would be worthy of an article in itself.

My next step is to save the file again. I save it as a .psd file, which is an extension Photoshop uses. I do this now so I

■ *Dave Hansen*

