DIGITAL PHOTOGRAPHY

skills °

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LAST TIME WE LOOKED AT USING RETOUCH TOOLS TO PERFORM BASIC REMOVAL OF BACK SCATTER. WE TOUCHED ON USING SIMPLE SELECTIONS TO APPLY RETOUCHING TO CERTAIN AREAS OF OUR IMAGES. AS YOU BECOME MORE PRACTICED AT EDITING YOUR IMAGES, YOU'LL COME ACROSS SITUATIONS THAT REQUIRE MORE COMPLEX SELECTIONS ALLOWING YOU TO WORK ON PARTS OF YOUR IMAGE WITHOUT AFFECTING OTHER AREAS. PART OF AN IMAGE MAY BE TOO BRIGHT BUT THE REST OF THE IMAGE IS JUST FINE. SOME BITS MAY NEED COLOUR CORRECTION AND OTHERS A CHANGE IN HUE, SATURATION OR SHARPNESS. SELECTIONS ARE THE KEY TO THESE SITUATIONS.

Let's take the most simple situation that any and all underwater cameras and camera users have encountered: the available light image. Sea water is a very efficient cyan (blue/green) filter, removing red from the light reflected from your subject. As soon as you dip below the surface everything takes on a cyan colour cast. After about 3 meters half the red light has been removed, at 10 meters red has been almost totally eliminated. Of course our very clever brain adds red into the scene, something that only a strobe can do for your camera. With your digital file open on your computer, what can you do to remove the cyan or add red into your subject?

Obviously the colour balance tools can do this for you. Either the Colour Balance dialogue box (Image > Adjustments > Color Balance) or the Curves dialogue box (Image > Adjustments > Curves) are the most useful tools. The Colour Balance dialogue box will allow you to exactly adjust individual colour channels with the ability to have a bias towards highlights, midtone or shadow areas. The basic rule to observe with colour adjustments in RGB is that you only adjust one or two colours, not three. You won't break anything, you're just neutralising your adjustment. If, when using the Colour Balance dialogue box, you add 100 units of

Kelvin Aitken is a Melbourne-based professional photographer and diver passionate about the big blue and the big sea creatures to be found out there. He's dived from the Arctic to the extremes of the South Pacific and if there's a new marine dive adventure to be experienced or invented, he's always the first to put up his hand. He's also dived the southeastern Australian continental shelf and photographed shark species nobody knew would be found out there. Kelvin is a BBC Wildlife Photographer of the Year marine category winner and his unique work is on www.marinethemes.com

red, green and blue the image will remain unchanged. Try it. If you add 100 units of red and yellow then add 80 units of green you are effectively removing 20 units of green which is the same as adding 20 units of magenta. With underwater images, you'll almost always be using the red and/or yellow colour channels.

With the Colour Balance dialogue box open, take a guess as to which colour you need to adjust. Our example is an available light shot so with all of the above taken into account, we will need to add the opposite of cyan, which happens to be red. (Figure 1) You'll probably find you'll also get a better result by adding a touch of yellow. Like all Photoshop work, it is easy to find out how to do something, it takes a lot of time to get good at it.

In our sample image, a good poke at the red channel and a touch of yellow makes our subject look 'normal'. However our adjustments have made the rest of the image look wrong (Figure 2). The background looked much better with no adjustments. That is where our selections come in handy.
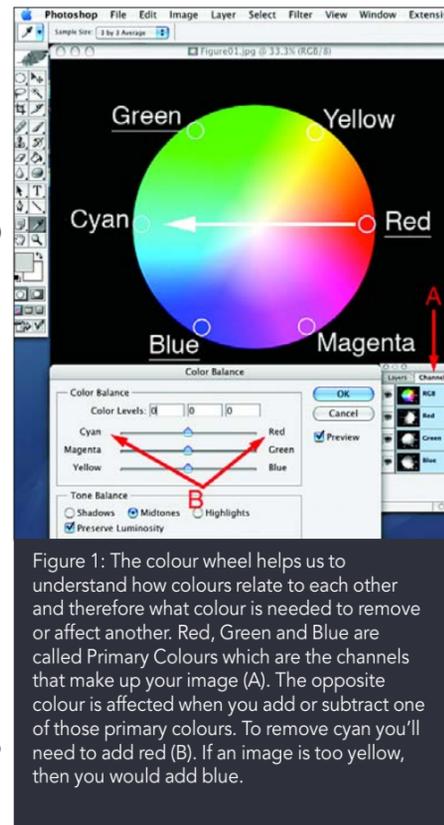

Figure 1: The colour wheel helps us to understand how colours relate to each other and therefore what colour is needed to remove or affect another. Red, Green and Blue are called Primary Colours which are the channels that make up your image (A). The opposite colour is affected when you add or subtract one of those primary colours. To remove cyan you'll need to add red (B). If an image is too yellow, then you would add blue.

If we select an area, such as our whale, then apply the colour adjustment, the colour will only change within the selection. Last issue we used the basic Lasso Tool. This is a great tool to use to select an area that doesn't have to be too precise, or to make very small adjustments to an existing selection. If you click and hold on the Lasso Tool in the Toolbar, you will see that there are two other Lasso tools, the Polygonal Lasso Tool and the Magnetic Lasso Tool. The Polygonal tool is one you'll rarely use; it's best suited for straight edged objects which you may find on a shipwreck or other man made objects. The Magnetic Lasso Tool is another one of those 'magic' doodads that are a delight to use. When I need a complex selection, that is the tool that I prefer.

For precise selections, it is best to work at 100% enlargement so that you can see what you are doing. Double click the Zoom tool to get to 100%. Select the Magnetic Lasso Tool. In the Options bar at the top of the screen or in the Options palette make sure that the Feather is set to two pixels. The other options relate to how the selection line behaves. The Width option specifies how many pixels from your cursor the tool 'looks' for an edge. Set it to 10. The Edge Contrast option adjusts the sensitivity of the tool in following an edge. Set it to 10%. The Frequency option tells the tool how often to set an anchor point. Set it to 50. With your critter showing in the window, click and drag along the edge. The tool will follow along, snapping the selection line to the edge and making anchor points. You can delete anchor points by hitting the delete key. To scroll the image while working, hold down the space

bar to temporarily switch to the Hand tool. It takes a bit of practice but persevere. You will soon be selecting with the best of them.

The beauty of this tool is that you don't have to exactly sketch the outline of your animal, the selection line snaps to the edge. Much easier than using the basic Lasso Tool for large, precise selections. If you find that a spot has an ill defined edge you can click your mouse to create an anchor point then another close by, forcing the selection line along the right direction. Or you can go back later and use the standard Lasso Tool to add (shift-click and drag) or subtract (Option/Alt-click and drag) from the selection. Once you're happy with your outline you have a number of other options you can apply to the selection. If you've forgotten to set the Feather option to two pixels, or you want a softer edge, you can adjust that in the Select > Feather menu item. You can enlarge the selection all over by a precise amount using the Select > Modify > Expand item or make it smaller via the Select > Modify > Contract. This is particularly handy if you're finding that the background is bleeding into the selected area or if there are other problems with the edges.

With our whale selected we now open up the Curves or Color Balance dialogue box to make our colour adjustments. The colour of the whale is adjusted while the background remains unaffected. Nifty. Once you're happy with the adjustment deselect the area (Select > Deselect) and you're done. With our whale image, the colour may be 'right' but it looks 'wrong'. It is 'too correct', looking unnatural (Figure 3, top). This problem has various solutions. First,

Figure 2: Overall colour adjustments often work just fine, but not with this example of a 'blue water' shot. The water has lost all reality. This is a great opportunity to use selections to work on just part of the image.
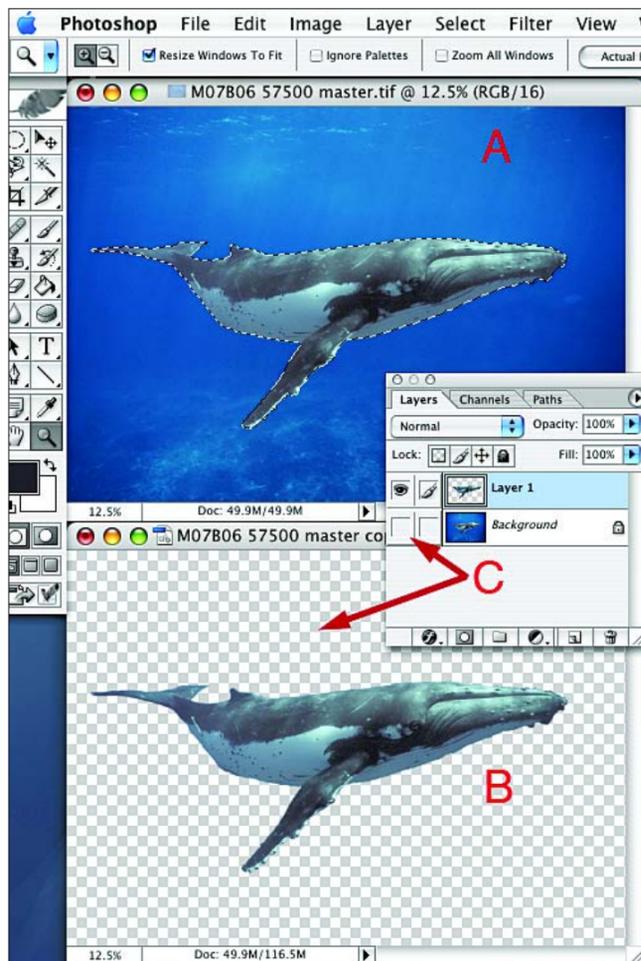
Figure 3: Our top image (A) has a selection with colour balance applied. The colour is close to 'correct' but the image looks unnatural. With the selection made without colour correction a new layer is made (B) copying our selection area. The background layer is turned off (C) so that we can see just our layer.

you can make your initial colour adjustment less vigorous. Strangely this is often very difficult to judge, sending you back again and again to try to get it just right. You can, if you immediately do it as the next step (it cannot be used if you first do something else), use the Fade function (Edit > Fade) to reduce the effect. Or you can take a big breath and jump into creating a Layer.

What is a Layer? A Layer is like a sheet of clear acetate placed over your image onto which you can place other images or copy bits of the background image. For example, lets say you want to put a bright yellow smiley face over part of your image. You could just paint it onto your photo but then it's changed forever. You cannot remove it as the information under it will have been destroyed. But if you put it on a separate layer you can make all sorts of changes without altering your original image. Creating a Layer is simple. Just go to Layer > New > Layer. However, you'll end up with the equivalent of a clear sheet of acetate with nothing on it. Much simpler to use our selection that we have made and use that to create a layer with our whale already on it.

If you've been fiddling around with your selection, use the History palette to go back to where you made your original selection (Windows > History). Then create a layer with a copy of your selection on it (Layer > New > Layer Via Copy). You don't want to make a layer with the Layer Via Cut option as that will cut out and remove the selected area from the original and we will need it there to do some work later. Don't be alarmed. Your selection will seem to have disappeared. The 'marching ants' that outlined your selection are gone and, because the layer is an exact copy of the selected area, your layer is perfectly camouflaged. If you go to the Layers palette (Windows > Layers) and, on the Background layer, click the small eye icon off and on, you can make the background disappear (Figure 3, C). Now you can see the upper layer all by itself. With the Background layer visible, make sure your new layer is selected by clicking on it in the Layers palette. Now you can make your colour adjustments with impunity without changing your background image.

A nifty tool to use is the Curves dialogue box (Image > Adjustments > Curves). Previous issues have shown how to use this powerful tool, targeting individual colour channels or the entire image. If there's a spot on your new layer that can be mid grey you can use the automatic functions of Curves. At the bottom of the Curves dialogue box you will see three eye dropper tools. They are used to make areas you click on either the darkest pixel, the mid tone or white point. Select the middle eye dropper. Now click on the part of the image that you want to be mid grey. Bang, the colour balance is changed using that point as a mid grey. If the overall colour isn't right you can click on other areas to change the balance or go to each colour channel and make minor adjustments. If you get yourself in a tizz, hold down the Option or Alt keys so that the Cancel button on the dialogue box turns to Reset and click it to go back to where you started.

Once your colour balance is right, click OK. You may want to use the Curves tool to adjust the exposure or contrast while you're at it. Now, go and stretch your legs then come back and look at your image again. Looking a bit overdone? (Figure 4) No need to go back and start again. In the Layers palette you will see an Opacity option. If you reduce the opacity a touch the original colour and tone of the background image will begin to come through, reducing the effect of your adjustments to the upper layer. Like most photo retouching, less is more. With the whale image, part of the problem is that the animal is so long that visually it seems wrong for the tail to be as cyan-free as the snout (A). If you used a strobe or flash on a smaller animal, such as a shark, the snout would be 'normal' in colour but the body would gradually become more cyan towards the tail as there is more water to look through at the back of the animal. The effect is subtle but evident. So what to do?

As mentioned in other issues, there are usually a number of ways to accomplish a single job. With our layer setup, we can allow the cyan coloured background to come through to change the colour balance on the tail while preserving the more neutral snout area. One way to do this is to erase the upper layer or to make it more translucent in a graduated manner. Select the Eraser tool. In the Options palette make sure it is in Brush mode. Click the Brush option and reduce the Hardness to zero. Change the diameter as
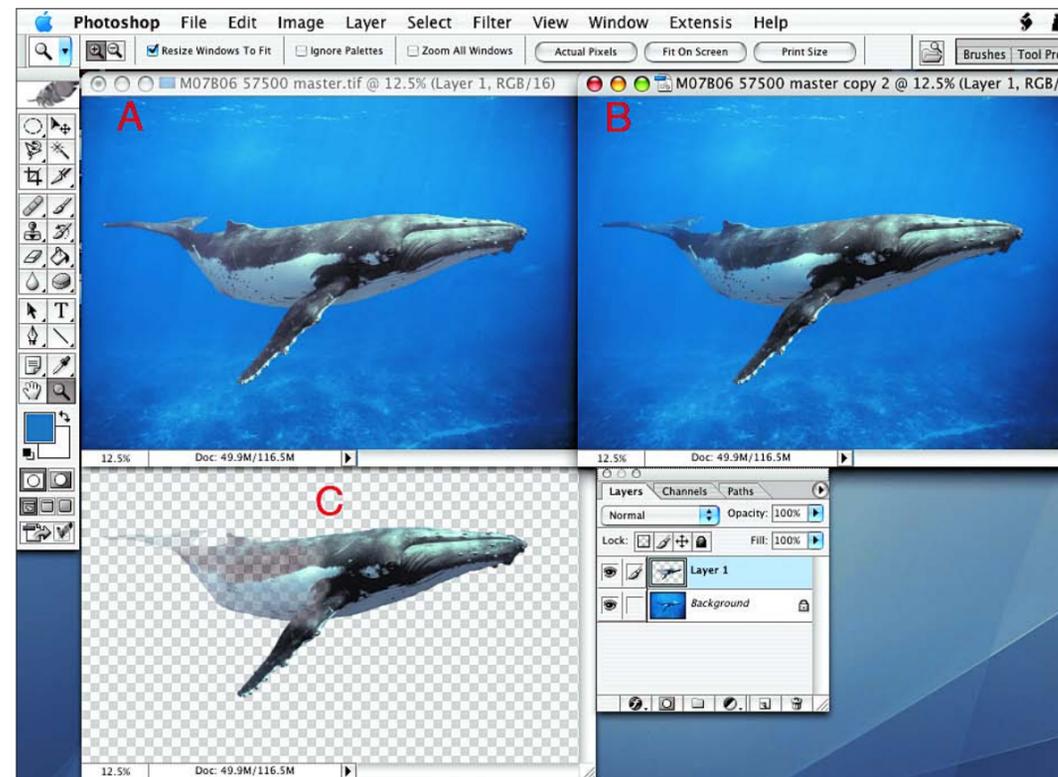

Figure 4: We start with an image with two layers, the background image and a copy of our whale selection with colour correction applied to the upper layer (A). It looks totally unnatural. Using the Eraser tool set at a low 5% opacity, we can slowly work away at the rear of the whale, almost completely erasing the tail graduating to no erasing on the front half (C). The background is turned off so we can see how much we have erased. The result is much more natural (B) and will look even better with a little more work.

well to suit. You'll be using a fairly large brush. Set the Opacity to about 5-10%. Now I'd brush away at the whale's tail, sweeping towards the middle dorsal fin area. Start each sweep at the back and move forward. Build up the erasing effect so that more of the rear is erased than the mid point. The cyan tinted background layer will start to peek through, giving you the graduated effect you need (B). Click the eye icons off and on in the layers palette to get a good idea of how you are doing (C).

When you're happy with your image, save it as a Photoshop or PSD file. Then flatten the layers (Layer > Flatten) and save as a TIFF or JPG. You'll then have your layered image to go back to later if you decide to do some more work.

Masks are another way to select part of your image. They can be used on selections and layers. A mask is a coloured overlay that works the same way as a selection. In addition you can use the Paint Brush to remove or add to the mask. The advantage of using a mask is that you can use many of the tools to change parts of the mask so that you can, for example, have a hard edge and a very soft edge, a hard square edge

and a soft graduated edge all in the same selection. However, for most of your work you can use simple selections and/or layers to do all your adjustment work.

Another type of layer that can come in handy are the Adjustment Layers. Go to Layer > New Adjustment Layer. You can then choose a layer type that is specifically aimed at adjusting a particular aspect of your image. These layers are often used when a team of people are working on an image so that someone can make minor adjustments without having to redo everything, or where you know you'll be wanting to make changes at a later date. Double clicking on an adjustment layer will bring up the appropriate dialogue box that has all your previous adjustments intact.

As with all these articles, the intent is to point you in the right direction. Learning how a particular tool works is only the start. You need practice to become adept at the 'art' of applying the tools, otherwise we would all be digital Michelangelos.

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