# digital photography

GOING GREY

There's something evocative about 'black and white' images. Like a good poet at work, a monochromatic image can cut through the extraneous and highlight the stark beauty or graphic simplicity of your subject. On a more practical note, converting to monochrome (single colour) can provide an image that is clearer or with higher visual contrast than a colour image. Lets look at a few ways to make the conversion to get the most out of your colour image.

In our examples we'll use an older version of Photoshop (version 7) as it will restrict us to simple methods of conversion. Similar or identical methods can be applied using Elements or other brands of image manipulation software. More recent versions of Photoshop have additional functions to target the conversion process, which we will cover later.

Now if you're asked to bring a cake to a family gathering, you have a few options, ranging from buying a pre-baked, chemical laden lump of transfat and sugar, to a lovingly crafted hand made baked and iced masterpiece using the best quality ingredients. In Photoshop, the quick and nasty method of creating a monochrome image can be found under Image > Mode > Grayscale. Select an image file you want to convert. Make a copy of it on your desktop. Let's rename it to MyMonoImage. Open your image file. Apply the Grayscale function. That's it, you're done. That may be all that you're after, in which case you can now go make a cup of coffee. But if you want to get the most out of your image, you can try a few extra things to tweak the actual conversion and target how each colour is interpreted.

Using the History palette (if its not visible, select Window > History) make a history record of your grayscale image by clicking on the Create New Snapshot button at the bottom of the palette. It will be automatically given a rather unimaginative name called Snapshot 1. You can leave it like that if you wish but for this exercise lets call it Grayscale by double clicking on the name next to the snapshot icon and typing in the name change. This step isn't vital, but it will allow you to quickly compare different versions of your conversion later. If your software doesn't have this function, just use the 'Save As...' function to save the different conversions. You can then open them later for comparison.
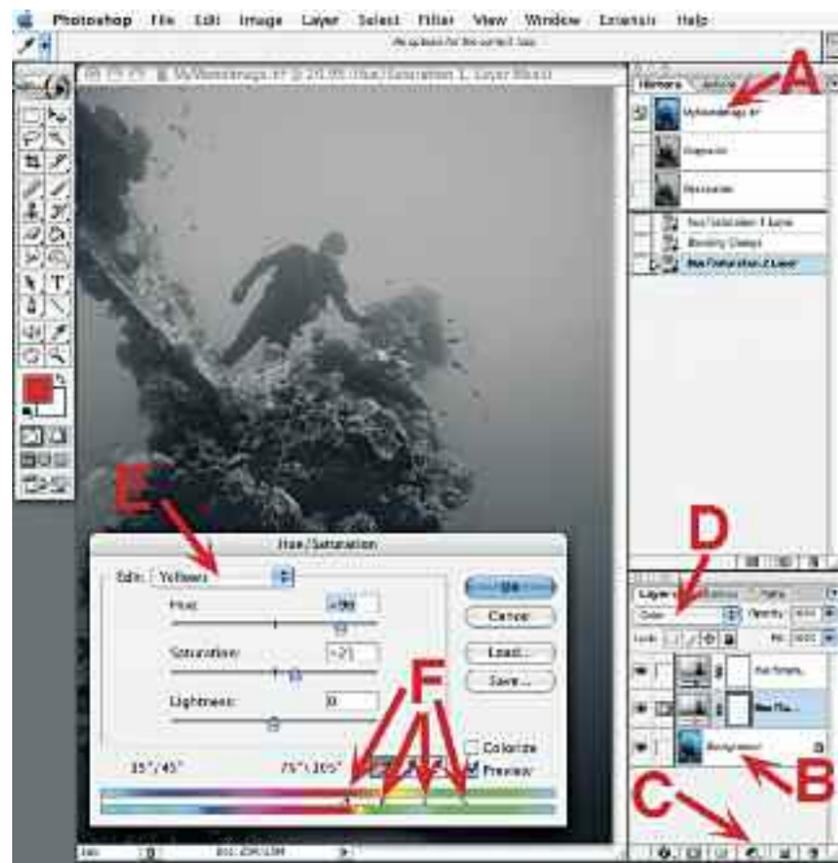
The history palette keeps track of the original opened file plus any snapshots you choose to create (A). Your original is always regarded as the Background layer (B) with other layers, such as our Adjustment layers, stacked on top. Creating new layers is easy with the New Fill Or Adjustment Layer button (C). Our first new layer is an Adjustment type layer whose properties were changed to become a Color adjustment layer (D). Double clicking the adjustment layer opens the Hue/Saturation dialogue box. We have chosen to play with the Yellow channel (E) and have left the colour range sliders in their default position (F).

There will already be a snapshot of the file in it's original state with it's file name (MyMonoImage, see Figure 1(A)). Click on that original colour snapshot to go back to the original colour file. Open the Hue/Saturation dialogue box (Image > Adjustments > Hue/Saturation). At the top of the dialogue box will be a drop down list called 'Edit:'. By default it should always be set to Master, which refers to the entire image or all the colour channels. If it isn't set to Master, click on the drop down list and select Master which is the topmost option. Now drag the Saturation slider across to the left. The numeric value of the saturation will dynamically change as you drag the slider across. When it hits the left hand side it should show -100 in the value box. If for some reason you want a particular value you can type it in using a + or - prefix but for now we want the full -100 desaturation value. When that's done, create a new snapshot with the Create New Snapshot button. Rename it to Desaturated. (You can shortcut this by going to Image > Adjustments > Desaturate.)

Normally when working with a colour image file we would tend to nudge the saturation slider to the right, into positive territory, attempting to increase the saturation to make our image more visually appealing. But as mentioned earlier, colour can get in the way of our message or distract from our subject matter. Desaturating the image obviously has the opposite affect so that, when applied at -100%, it will leave you with no colour (other than black and white) but with all the tonal detail intact. If you were to compare your desaturated image file with the Grayscale snapshot you'll most probably find that the automatic conversion actually looks better than just desaturating the image. It will most probably have more contrast. So obviously, just desaturating an image is not the best way to go.

Now if you've been fiddling with the Edit drop down list you'll have noticed that you can apply all of the Hue/Saturation adjustments to single colour channels. But once you have desaturated an image there is no more colour information to fiddle with. You're left with density or tonal values only. So where is the tonal control? Lets go back a few steps.

Go back to the original colour image file by clicking on the first snapshot. We're going to keep our original with all the colour information but add a couple of layers with which we will work our magic. Under most circumstances, layers are not that necessary unless we want to save particular selections or adjustments for more tweaking and fiddling at a later date. But in this instance the layers will actually contribute to our efforts. However, they are not 'normal' layers that we'll be making.

If you are unfamiliar with layers, imagine that you have a print of your image. On top of your print you will be placing a clear sheet of acetate or plastic, invisible to the eye until you paint or draw something on it. This is how 'old school' cartoon animations were done. Fred Flintstone would have his body and head on one sheet, his arms on another, his mouth on another, all sitting on top of a background image. Then the artist could just change the drawing on one sheet to make the mouth move, or an arm, without having to redraw the whole scene. In Photoshop a layer can be empty, or we can select an area and make that a new layer, or we can copy the entire image onto another layer. In a previous article we showed you how to use layers to make selective colour adjustments. Check the links section for a recap.

We're going to make a layer of the entire original image. If your Layers palette is not visible, go to the menu bar at the top of your screen and select Window > Layers. You'll see that your image is the only layer shown and is called 'Background' (Figure 1(B)). At the bottom of the palette is a 'Create New Fill Or Adjustment Layer' button (C). Click and hold on it. A menu will pop up allowing you to select a variety of Adjustment Layer types. We will select the Hue/Saturation type. Or you can use the main menu bar, Layer > New Adjustment Layer > Hue/Saturation. A new layer is created, showing up in the layers palette. You will also be presented with the Hue/Saturation dialogue box. Don't make any adjustments to the sliders as we will do that later. Just click the OK button to close it. The new Adjustment Layer should be highlighted in the Layers Palette. If for some reason it is not, just click on it to select it. In the area just above the layers, but still in the Layers Palette, you will see a drop down list, usually with Normal selected as the default option. Click on it and scroll down to near the bottom and select 'Color' (D).

Now we need to make a second Adjustment Layer. Go through the same steps above, creating a new Hue/Saturation Adjustment Layer. But, when presented with the Hue/Saturation dialogue box, drag the Saturation slider all the way across to the left so that '-100' is shown in the value box, then click 'OK'. Leave the drop down list as 'Normal', do not change it to 'Color'. Create a new snapshot and call it 'Layers'.

While our image may look the same as the basic unsaturated image (you can check by clicking on the snapshot we made **>**

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earlier) the difference is that all the colour information is still there, even though its not readily visible.

OK. Now the fun starts. Click on the first layer you made, the one just above the Background layer. This is the layer that we made that adjusts 'Color'. Double click on the layer to bring up the Hue/Saturation dialogue box for that layer. Now you can fiddle away to your hearts content. Every image is different so take some time to see which adjustments work best for your pic. Start with the Hue slider at the top, moving it slowly left and right of the centre position. Try the Saturation slider as well. You can even fiddle with the Lightness slider, though it will be less useful. Set all the sliders to zero to go back to where you started. Now click on the 'Edit:' drop down list and select a particular colour. If your

working with an Adjustment Layer so you're not going to break anything. You can always go back to the start (i.e. hit the Cancel button or hold down the Option key on a Mac or Alt key on Windows to change the Cancel button to a Reset button) and try again. At this stage you should also save your image file as a Photoshop or .psd file, which will save your image with all layers intact. That way you can always come back to it, double click the adjustment layer and there are your previous adjustments ready to be tweaked. You can also save it as a TIFF file as long as you check the Layers option in the Save dialogue box.

Once you gain experience, you'll see the potential to change particular colours to make them lighter or darker in the conversion to monochrome. You will be able to fiddle with a range or hue of

now see a range of colours considered to be 'yellow', indicated by an upper and lower range arrow and a narrower band of upright lines or bars (F). Now when you change the hue of yellow you will see a particular range of colour, out of the total spectrum, slide left or right in the bottom band, offsetting from yellow into either green or red. Or at either extreme, it converts its hue to the exact opposite of yellow, namely blue. This would look really weird if we were looking at a colour image but we are looking at what those colours are when converted into the gray scale.

If you have an image with a yellow sponge you can play with the Hue slider to change it's tonal range. Now if you have another sponge in the image that is 'sort of' yellow but with a heavier red inclination you can click on the left hand arrow and vertical bar,

curve by clicking on it once, then moving the upper and/or lower parts of the curve to adjust the contrast. Finally flatten your image (Layers > Flatten Image) and save as a TIF or JPEG.

If you have more recent versions of Photoshop, you can click on colours within the image and slide left or right to change the hue. Essentially the functions are the same, they're just accessed a little easier for anyone doing a number of conversions. You can also work with 16 bit image files to cut down on banding or other digital artefacts. See the Links section for a video presentation on how to use the additional conversion functions in the newer versions.
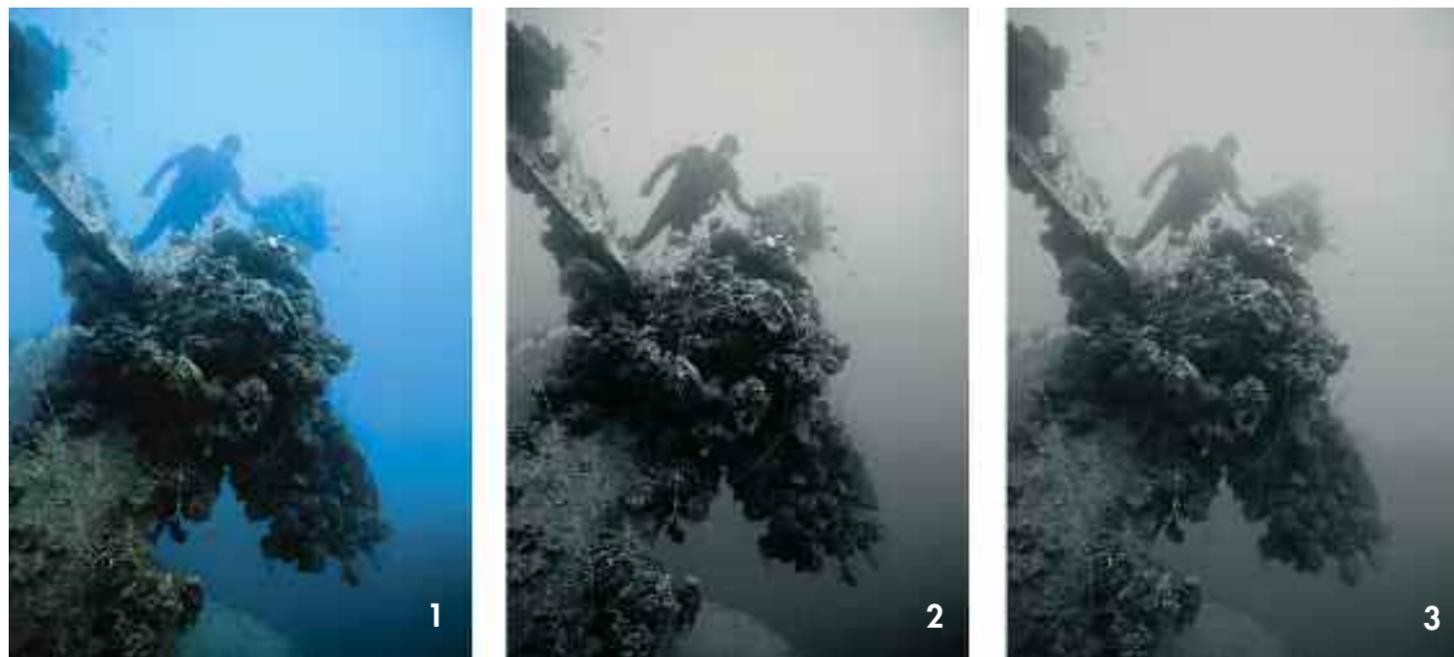
between the two bands, and move them to the left, you will include more of the red spectrum in your 'yellow' adjustment. In effect, you will now be changing both sponges at about the same rate.

It may help to remember that in nature there are no pure colours. All colours are 'tainted' with other colours, which is why we have shown in a previous article that when we over-saturate an image, we remove those colours and thereby lose texture and detail. (See Links section.) So when we change yellow, we are changing a range of yellow from reddish-yellow to greenish-yellow. Photoshop arbitrarily selects a particular range of the yellow part of the spectrum, we can choose to widen it or narrow it down.

1 My original colour file was shot with available light.   2 A simple Image > Mode > Grayscale conversion is OK, but not what I want.   3 A simple desaturation looks muddy and flat.   4 But when converted with adjustment layers along with some contrast tweaking, I got my gritty World War II relic. (I could apply even more contrast then run a grain filter over it to replicate a war correspondent's high ISO 35mm film.)

image is heavily biased towards cyan/blue, such as in an available light photo of a wreck, then select one of those colours (E). A colourful reef scene will respond well to red or yellow while the cyan and blue will work on any background open water areas.

What you should be aiming for is to create a pleasing monochrome image with as much detail in the light and dark areas as possible. It may look a bit flat and muddy, but we will target that next. The first time you try this it may take some time to see the full potential of these adjustments, but remember, you're

a particular colour to change it to a specific tone to suit your image. With the Master option selected in the 'Edit:' drop down list you'll see two rainbows of colour at the bottom of the dialogue box. As you change the Hue you will see the bottom colour band move in relation to the upper band, representing the original colours. This is a visual cue to show you 'this is what the original is compared to the changes you have just made'.

While initially this may not appear very useful, wait until you select a particular colour channel. In the 'Edit:' drop down list, select a colour, say yellow. Between the two colour bands you will

Don't be daunted by all of this. Just fiddle away and you'll soon find out what works for your image. Remember that at any time you can hit Cancel or Reset to go back to the beginning. You can also double click the Adjustment Layer later and tweak your adjustments. The next image you convert may need totally different adjustments in fewer or more colour channels.

When you're happy with the detail in your image, click 'OK'. Finally you can tweak the contrast. Click on the Background layer to select it then use the Image > Adjustments > Brightness/Contrast option to fiddle with the contrast. I prefer to use the Curves dialogue box, anchoring the middle point of the