

illumination. When you adjust white balance in the RAW converter you are doing the same thing. Since different strobes require different white balance settings (therefore affecting the colour of the water in your images) – strobe choice on digital is comparable to film choice on slide.

To run through an example, if we use warm strobes then the foreground subject will appear to the camera (or to us white balancing the RAW file in post processing) as too warm and the white balance will be used to cool the image (the Kelvin value will be lowered). Importantly this adjustment is applied to the entire image.

Cooling the white balance results in a correct looking foreground and bluer background. If we use cool strobes then the foreground will be too cool and the camera (or us) will attempt to warm it up with the white balance. This will again result in a correct looking foreground and a less blue background. You can see this visually in the real world example in Figure 3.

It is clear from the examples (Figures 2 & 3) that the effect is subtle, but this difference will be there in all your images. The only difference between the two shots in Figure 3 was the type of strobe I used. Once the foregrounds are adjusted to the correct neutral colours the blues are clearly different.

Many of you may now be



worrying that you have the wrong strobes – don't. We don't have to settle for what the manufacturers give us – we can warm and cool our strobes by attaching lighting gels to them. Lighting gels are not expensive (because they are not made to optical quality like lens gel filters) and can be bought easily from film and theatre lighting suppliers. Compared with typical underwater lens filters, the strength of filter required is very weak – to change an Inon Z240 (5500 K) to match and Ikelite DS200 or DS125 (4900 K) you need a +22 Mired shift colour conversion filter – a Lee (Number 444) Eighth CT Straw Filter is perfect and can simply be cut to fit the strobe. To see how mild a filter this is, have a look at Figure 4 where I have compared this filter with some common underwater lens filters.

We have seen that warm

Figure 4. This is photo of some filters on a lightbox. Note that the strength of filter 1, a Lee 444 Filter - required to adjust a Inon at 5500K to a IkeliteDS125 equalling 4900 K is much, much weaker than other standard lens filters for underwater photography. It is also cheaper to buy as it is not made to optical quality. For information: 2 is Magic Filter, 3 is CC50Red, 4 is Wratten 22 and 5 is Auto-Magic Filter.

strobe lighting forces a cooler white balance on the image which renders richer blues in the background. Therefore it follows that any factor in our photographic technique that lessens the warmth of the foreground illumination will reduce the richness of the blue. If we are too far from our subject the light reaching it will be cooler and the image will require warmer white balance, weakening the blue. This is a common symptom in many underwater images. Similarly if we are shooting a balanced light image and we use too little strobe on the subject (so that the subject is illuminated by a mix of strobe and ambient light) the blue will be less rich, if we try and correct the foreground colours.

So far I have only considered blue water shooting. What happens when we get into greener waters? If

we use warm strobes in green water our foregrounds are again a bit too warm requiring a cooling of the white balance to create a neutral foreground look. If we cool down green water we actually push it away from green towards a blue-green colour (Figure 5).

Personally, when I shoot in green waters I like to try and record a rich green colour and warm strobes erode this. Instead I prefer cooler strobes, like the Inons. A cool strobe will require a warmer white balance setting, which will increase the greenness of the greens, producing that desirable emerald look. Again you can prove this to yourself with your own images. Open up a green water wide angle image in your RAW converter and try moving the colour temperature slider between 4300 K and 5500 K. Ignore the foreground colour and watch how much the water colour changes.

Personally I have quite a bi-polar view of the ocean's many colours: I like my blues to be rich blues and my greens to be rich greens. However, many photographers diving in green waters actually like them to look quite blue. Here in the UK photographers often wait for the bluest conditions before shooting wide angle, blue water makes temperate water look particularly inviting! Either way it is important to appreciate the importance



Figure 5. These two frames show the same green water image processed at different white balance values. This image was lit by my Subtronics and the upper frame at 4300 K, produces a neutral foreground. However this setting has “blued” the green water considerably. The lower frame is processed at 5500 K, which has produced a greener water colour. However, this white balance has also made the foreground lighting too warm. Had I used my Inon strobes for this photo, then I would have been able to combine the green background of the lower frame with the neutral foreground of the upper frame.



In temperate seas I like to try and capture rich emerald green backgrounds. Cooler strobe lighting forces the camera to warm the image with its white balance which enriches the greens. In comparison to Figure 5, note how this image, taken with Inon strobes, has a neutral foreground and a rich green background. Nikon D2X +105mm VR. Subal housing. Inon Z240 strobes. 1/50th @ F14.

of strobe choice in this regard. If you want to enhance any blueness in your temperate waters go with a warm strobe, if you want to boost its emerald green, then a cool strobe is better.

I am certain that many of you will be reading this article thinking “Why worry? I can adjust it all in Photoshop anyway.” This is true, but I believe that it is important to strive to get the best possible results from the camera for several reasons. First, there is the ethical consideration of presenting images as shot as well as personal satisfaction. Perhaps more relevant today is the image quality issue. Strong individual colour

adjustments either in Photoshop or even in a RAW converter are one of most damaging adjustments to image quality, introducing plenty of colour noise, particularly in gradients. Second, there is a time issue. I recently noted that my Nikon D2X had taken 93000 photos, nearly all of these underwater. Even if a colour fix takes less than 10 seconds applying it soon mounts up if you take a lot of images. Most photographers who shoot a lot soon learn to discard any images that will cost additional processing time. It makes sense to make adjustments to your shooting technique that minimise your computing requirements.

The other crucial concluding comment is that there are no rights or wrongs when it comes to water colours, only personal preference. As I said above, I like my greens to be green and my blues to be blue. That’s me, and for this reason I use my cool Inons in green waters and my warm Subtronics in blue waters. You may well be different.

When we all shot slides, our choice of film stock had an important effect on the water colours recorded in our images. These days it is the colour temperature of our strobes that has a similar effect. Neither factor makes a massive difference, but their affect is plain to see in every image we take.

Understanding the importance of the colour temperature of your strobes is very much like choosing the correct film stock to achieve the look you are after. It is one of the small factors that can make the difference between getting a nearly image and the one you really wanted.

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