

DIGITAL PHOTOGRAPHY

Kelvin Aitken's unique and comprehensive how-to guide

REPAIRING BACKGROUNDS USING LAYERS

We usually have the best of intentions. We watch what we eat, don't drink too much too often, go for a walk, resist the block of chocolate or that Danish in the coffee shop. But then, put those temptations in a large social gathering and, boom, we throw all caution to the wind.

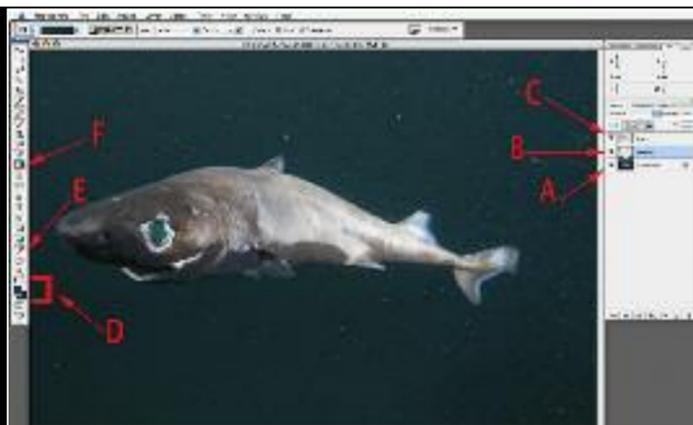
We've discussed in the past how to avoid back scatter, how to aim our light(s) to keep things clean, how to choose our backgrounds and compose our subject to avoid all the nasty things that can happen. But every now and then (maybe more often with some of us) we throw all caution to the wind and just blast away,

On a dive trip to the Izu Peninsula in Japan, I had two opportunities to capture some nice pics. One was of a common critter, a bigfin reef squid, and the other was of a rare (for divers) deep water shark, a very pretty and bizarre great lanternshark *Etmopterus princeps*. What the two subjects had in common was (on

sand flat of very fine particles which was being stirred up by a storm brewing on the surface. My flappy feet and choking excitement did not help either. In both cases, it was shoot or miss out.

Yes, I had all sorts of excuses. At least my lighting was fine. It was just that the rest

Our little shark is surrounded by a storm of silt, sand and general gunk. The original image is our Background layer (A). We have selected the shark and turned the selection into a layer (C) named "Shark". We have also clicked on the Background layer then created a new empty layer (B) which now appears between the original Background image and the Shark layer. You can drag the new layers to change their order but the Background layer is locked, shown by a small padlock icon, so remains fixed. The Foreground and Background Color swatches (D) can be found on the bottom of the Tool palette. You can see the little two sided arrow to switch one with the other and also the Default black and white icon. Click that to reset to black and white, if you get into strife. With our eye dropper tool (E) we have selected the lightest tone, then clicked the "switch" arrow and then selected the darkest tone. In this image, they are very close in value so look very similar. Select the Gradient tool (F) and drag on the image to place your new graduated background in the Gradient layer. Some selections in the



Tool palette have multiple selections. Click and hold to find the hidden tools. e.g. If the Paint Bucket tool is shown, click and hold then select the Gradient tool which appears in the drop down list of icons.

hoping for the best. And that's totally understandable.

If you have one chance in a lifetime to photograph something special, one very brief opportunity to capture that rare critter, or the dive environment is so extreme, with high currents, or bad viz, or heavy ground swell, or all those combined, then maybe we can understand why our shots may occasionally be, shall we say, less than optimal. Lets look at a couple of tools we can use to save our reputation and our sanity.

checking my files later in the comfy warm Ryokan guest house) that I'd committed the crime of capturing my critters in a snow storm. No, a blizzard. A veritable hurricane of stirred up silt, sand and assorted gunky stuff.

With the squid, I was on a silty, sandy slope. I was in a rush as I was close to running out of air and, as is normal with a dry suit, I was in desperate need to, how shall I say, decompress my bladder. In my hurry to get some shots of my flighty subject and get out of the water, I stirred up the silt and caused a storm of junk. With the lanternshark, I was on a

of each image was a disaster. I could find another squid, as they are rather common, but the lanternshark? Never again. So, what to do? Fire up your trusty photo editor and go to work. In all my examples I use Photoshop, because that's what I happen to have loaded on my laptop and office computer. But any photo editing software that allows you to use layers and create graduated fills will do the trick.

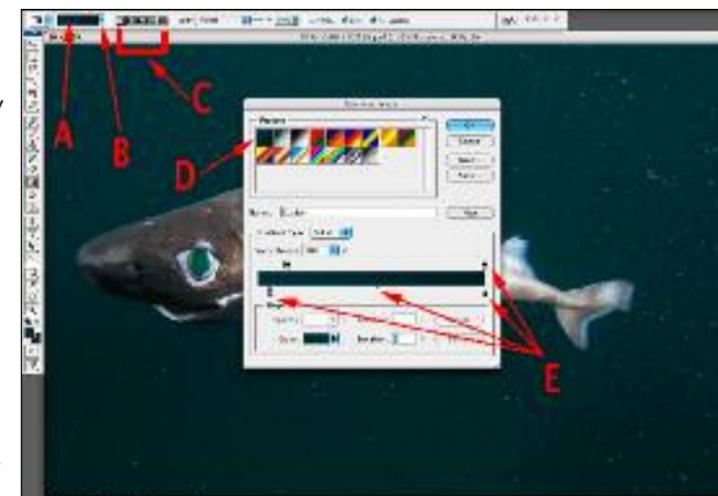
First off, work over your main subject matter, using the Clone tool or Healing Brush to get rid of any blemishes on the critter itself. Forget about the background

for the moment. Make whatever contrast, colour and exposure adjustments you need to get the animal or main subject looking how you want it to be. Again, forget about how the background looks, just work on the main subject. Select your subject. I usually prefer the Magnetic Lasso tool, with the Feather option set to 2 pixels, which, with a bit of practice, automatically sticks to the edges of your critter. Don't fret too much if you run across a very soft nebulous edge that does not lend itself to the Magnetic Lasso tool. Just run it along roughly and you can refine it after the initial selection is made. Once your selection is finished, if you have any areas that need including or excluding or just generally smoothing off, switch to the standard Lasso tool and, while holding down the Shift key, you can add to the selected area, or the Option/Alt key, to remove part of the selection. You can also expand, contract, smooth, feather (make the edge softer) and change the border using the Select>Feather or Select>Modify menu settings.

Turn that selection into a layer. In Photoshop I usually create a new layer as a copy (Layer>New>Layer Via Copy). In other words, you are not cutting it out and leaving a hole, you are selecting an area and creating a second copy of that area over the original one. Yes, you can use Layer Via Cut to create an empty space behind your new layer, but there are reasons why copying can be better so make it a habit to copy, not cut. (Check out the previous articles that deal with layers and you'll figure out why.) So far so good.

In the Layers palette (Window>Layers) you'll see you now have a background layer, your original image, and a new layer called Layer 1. If you wish you can rename your new layer to something different such as 'squid' or 'shark' or any other descriptive term. Just double click the text next to the thumbnail in the Layers palette and type in a new name for your layer.

We don't want to destroy the original image, the background layer, as we're going to create a new open water background without all the back scatter and general junk. To do that, create a



With the Gradient tool selected, click on the Gradient editor (A) to fiddle with the final appearance of your gradient. If you click on the little arrow section (B), you will have chosen the Gradient Picker, which is a smaller subset and does not give you control over the gradient effect, showing just the gradient presets (D) and nothing else.

You can control how your gradient changes from one tone/colour to the other by using the sliders for opacity (top sliders) and colour (bottom sliders) and also the mid point of either. In fact, this is a very powerful dialogue box, allowing you tweak all manner of variables. Just the Presets section alone (D) has a wide variety of gradient types with more found via the tiny arrow at the top right of that section. See the links section for more info.

new layer in which to put the new background. You can do this by selecting the background layer in the Layers tab and then go to Layer>Duplicate Layer in the menu bar at the top of your screen. Or you can just create a new empty layer with Layer>New>Layer. The latter is my preference as I find it is slightly less confusing. (You can skip this step and just overwrite the background layer with the new clean background we will make, but later, if you want to come back and make changes that needs information from the original image, you will be stuck.)

that by changing the Foreground and Background colours which are at the bottom of the Tool Palette. With the Eye Dropper tool, click on your image in the lightest area of your existing background. Not on a piece of back scatter or junk, but on a clean spot. You're trying to select the colour and density of the lightest part of your background. When you do that, your Foreground colour will change in the Tools palette.

In the Tools palette you'll see that there are two colour squares. One is now your new 'lightest' colour. Next to the two

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squares is a small curved double ended arrow. Click that to switch your Foreground colour to the Background colour. Don't worry if this is sounding complex. Just follow along and you'll get the hang of it.

Now use your eye dropper tool to click on the darkest colour you want your background to be. You now have, in the Foreground and Background Color



Main point here is to make sure your gradient layer is selected (A) then apply your noise via the Noise dialogue box found under the Filters menu. I have gone over the top for illustration purposes, adding a level of 20% (B), but you probably will be adding something like 4-8%. The dialogue box only shows the current layer in the little preview window, so make sure the Preview button is checked (C) to get a better idea as to how it's changing your image. Apply the filter with your image magnified to 60-100%.

swatches, two different colours which will be the darkest and lightest colours in the new gradient that we'll now create.

Just make sure that your latest empty layer you created is selected in the Layers palette. You can even rename it to 'Gradient' to help you keep track of things. With the Gradient Tool selected (keyboard shortcut = 'G', but that can select the Paint Bucket tool as well so check prior to use), click on the top edge of your image and drag all the way down to the bottom. After a few seconds, your new background will appear as a gradient from one colour/ tone to the other, the ones you chose with the Eyedropper Tool.

Since there are so many variables, there's a good chance your first effort will be a stuff-up. You may have placed your gradient over your subject because you had the wrong layer selected. Or your colours may be wrong. Or your gradient is upside down. (If the latter, just do it again, dragging from the bottom up or hit the arrow in the Swatches panel to switch tones.) In the Options bar for the Gradient tool you may have the wrong type of gradient appearance chosen or the wrong type of gradient distribution. Check the illustrations for more details.

Once you're more confident with the process, you can choose different tones and colours, either by using the Eyedropper Tool or by directly clicking on the colour swatches in the Foreground/Background swatches and choosing a colour and tone from the colour picker box that pops up. Fiddle around with the Radial, Linear and Diamond gradient options and see what effect they have. Try starting and finishing your gradient from the diagonal corners or from the sides. In any instance, you'll do best with something that looks close to 'normal'. Radical changes are usually, but not always, a bit of a disaster.

Once your gradient is perfected, save your file in Photoshop (.psd) format or Tiff format with the Layers check box ticked. I always save my layered images in .psd format and

flattened images in .tif format, not because one is better than the other, but I can see at a glance which file has layers included.

Now you can fiddle with your image to finesse the result. With your new background, you may now find that some edges in your main subject show up as a bit harsh, wobbly or in need of cleaning up. Select the layer containing your subject and use the Eraser tool set to Brush mode to clean up the edges. Adjust the hardness of the brush to match the natural sharpness or softness of the original image. You don't want an out of focus part of your image to have a sharp, hard edge, it will look stupid

and jarring. Same with a hard focused edge. Use a harder setting to match what's already there.

You may find that the Clone tool will do a better job. However, with the Clone tool you may want to turn off the 'Use All Layers' option as you may not want to be cloning in parts of the gradient or background image (or you may want to, just fiddle and try it out). The Healing Brush probably will not help much with edges as it tends to blur in information from the other layers.

As a final step, you'll want to introduce some 'real world' mistakes into your image. Navajo women, who were masterful rug makers, included a small mistake in their patterns called a 'Spirit Line'. This was to show or indicate humility as an artist. This can also be found in Islamic art. Far from detracting from the finished object, these 'mistakes' provided a connection to the imperfect artist. With our photographic art, our background is much too perfect. It will jump out and cause a distraction. Nothing is worse, unless intentional, than a photograph that looks false or doctored. But that's exactly what we've done, so let's not get caught out. Let's create some real world roughness.

With the graduation layer selected in the Layers palette, introduce some digital noise by selecting Filter>Noise>Add Noise. A little dialogue pops up which allows us to apply a given level of noise to our layer. You won't need much, maybe 6 or 7% in the Amount box. You can fiddle with the Distribution buttons if you wish, but generally Uniform will do. The preview window will give you an idea of how much noise you are generating, or you can zoom the image to 100% first and see firsthand the effect there. You want enough noise to take away the perfect smoothness of the background, but not so much that it looks overwhelming. If your subject has some smooth areas, try to match the noise so that the 'graininess' matches.

The above relates to images with a relatively even background but you can also create a more radical sunburst effect with a little more effort. However, for starters, practice the process with images sporting even-toned backgrounds, or close

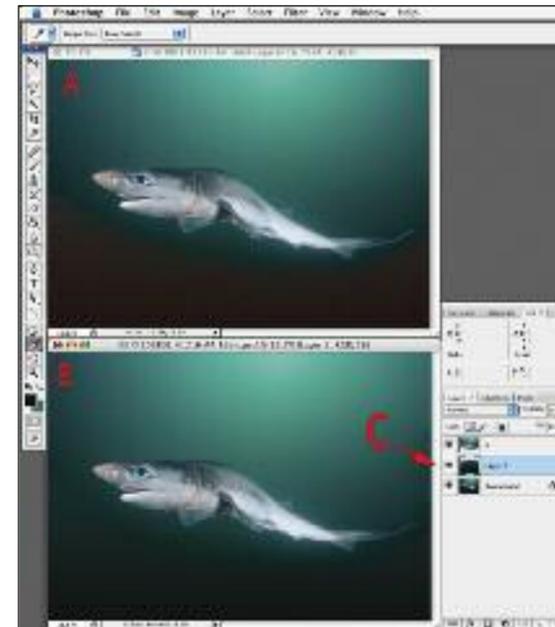
to it. You can also use this method on part of an image, where maybe the top half is in major need of a clean up. If you need to change the gradation from an even transition to a shorter, more dramatic shift, the path to happiness lies in the gradient editing window in the options bar. Click on the colour bar, not the little

arrow which just shows the gradient types. You know that you have the right one when you see a window with a range of gradient types plus a set of sliders and your gradient colours. By moving the top sliders you change where the opacity changes and by moving the bottom ones you change the colour gradient. The more dramatic your gradient change, in tone and colour, the easier it will be to see your tweaks.

Creating a sunburst effect takes a little more time, effort and filters. But this basic background clean-up is a good primer. Often even-toned areas, such as open water backgrounds, are the more difficult to deal with. The above process will help you with backgrounds that are beyond the normal 'fix-it', namely using the clone stamp and healing brush.

In review, the process is to select your subject, turn it into a new layer then create a layer under your subject in which to place a gradient, ranging in colour and density from the colours you pick in the Foreground/Background swatches palette in the Tool Bar. Add noise to taste. With a little practice, you'll find that making a clean background can save you a lot of time and frustration.

Now go enjoy a coffee and Danish!



This image (A) is from a poor quality film scan. The dark areas at the bottom of the frame are heavily biased towards the red zone, have noise, banding and all sorts of nasty stuff going on. I made a quick fix by applying our lesson, creating a selection of the upper 2/3 of the image with a soft edge then creating an empty layer into which I placed a gradient (C). I used the Eyedropper Tool to select colours for the Foreground and Background swatches but then fiddled with them to make them darker to match what I wanted. Add noise, and, viola, a rescued image (B) without having to find the original slide and go through the scanning process again.

Links>

http://help.adobe.com/en_US/Photoshop/11.0/index.html
<http://www.newtutorials.com/selective-color-adjustment.htm> (just skip the layer step)
<http://www.photoshopessentials.com/photo-editing/match-color/>
<http://www.youtube.com/watch?v=HLJ5M5YOPGw> (match color tutorial)
<http://www.youtube.com/watch?v=uxIEbAJIXn8> (selection tool basics)
<http://www.divetheblue.net/photography.php> (past articles)
<http://www.bairarteditions.com/pages/tutorials/photoshop/cbhuesat.html>
http://www.youtube.com/watch?v=NwejSb_HxBO (hue saturation)