

Light Management

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The long climb to a lime-rich cliff on Ben Lawers in Perthshire had been made all the more arduous by the intensity of the July sun at this high altitude. With my friend, Alban, I had come in search of the alpine gentian (*Gentiana nivalis*) one of the rarest flowers on the Scottish mountains, blossoming at fewer than five locations. I had seen it only once before, in Angus in 1982, and knew that it opened its intensely blue corolla only in sunshine. We were lucky to find it (lucky because the plant is scarcely 3cm high) and I immediately set up a diffusion sheet to lessen the contrast. Within 5 minutes, the flowers had shut - and Alban had a long wait before his chance came to photograph them...

Fortunately, few close-up subjects are quite so photo sensitive - which is just as well as I almost invariably throw a diffusion sheet around the composition on sunny days. Teamed with a variety of reflectors, I have a complete, and inexpensive, set of tools to manage daylight and flash in the macro zone.

So what's wrong with sunshine?

If only film recorded contrast in a scene, as we perceive it, there would be no need to manage light. But while our visual system allows us to see everything clearly in a sun-dappled forest, slide film's ability to render detail in highlight and shadow is limited to values about two stops either side of mid-tone. Anything lighter or darker requires exposure compensation (closing down the aperture to retain highlight detail; opening it up to show detail in the shadows) with knock-on consequences for all the other tones in the picture. The diffusion sheet works by intercepting direct sunlight on its way to the subject, scattering it around and reducing contrast by lifting shadow values - in the case of my sheet, by almost 2 stops - and suppressing highlights - by up to one stop. The result is even but bright illumination where highlights and shadows are controlled. Reflectors have a slightly different application and are not interchangeable with diffusers as they do not hold back highlights; shadows may be lightened but the risk of "hot spots" remains.

Under the Sheet



This Latvian wood was full of both white and yellow anemones, but I found only one clump whose shape worked for me. Unmediated direct sunlight (left) hid too much shadow detail as I chose an exposure to accommodate detail in the petals. Now and again, the sun went behind a cloud, lowering contrast but lending the scene a blue cast (center). The best results came when sunlight shone through the diffusion sheet onto the clump (right). Nikon F4, 90mm, Velvia.

I have seen some writers advocate casting a shadow over the subject with, for example, a black brolly. While this certainly reduces contrast, it also deprives an image of its brightness, flattening colours in the process. Imagine standing (as if you had the time) looking at a red Ophone box on a bright, but overcast day, one of those days when you have to screw up your eyes to look at the white sky. The colour is vibrant. As night falls (do you really have nothing better to do?) your eyes adjust for a "right exposure", but the red becomes ever flatter and duller. It has lost its brightness. The same happens when a subject is cast into full shade. The closer the shade is to the subject, the flatter the picture. If you can hold it far enough back and still completely shade the subject, ambient light will restore some brightness.



On return from an early morning beaver hunt, I found this well defined badger print in some fine clay. While the print itself was in full shadow, the blue sky above coloured the scene. I increased the colour interest by reflecting some golden light into the print. Nikon F4, 90mm, Velvia.

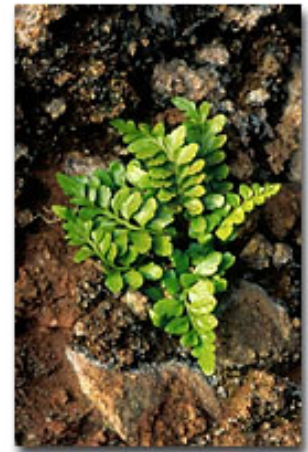
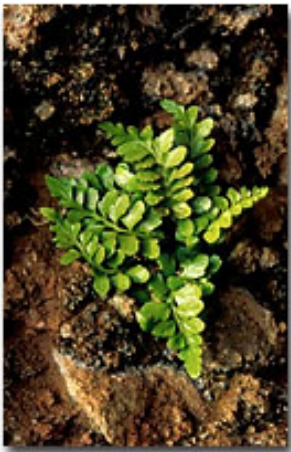
A diffusion sheet, on the other hand, is normally best placed as close to the subject as possible. The bigger a light source relative to the size of the subject, the more even the illumination. That's why thin cloud (perhaps just 5km from the subject) produces more even lighting than the sun shining through a clear sky from 149 million km away. The beauty of working with diffusion sheets is the way in which the effect can be viewed through the camera, making the decision of where to place the sheet a creative one rather than one left to technology or chance.

The very first diffuser I used - and still have - was an opaque mattress protector which over time turned quite yellow (through field rather than domestic use.) It was time for a new one. My embarrassment at going into department stores and asking to see their range of mattress protectors - "Oh, do you mean incontinence sheets?" - finally came to an end when the company that makes up hide covers for me supplied a heavyweight semi- translucent plastic sheet which is really the business. In brilliant sunshine I sometimes need to use it double thickness but the sun in Scotland seems rarely to reach such intensity. The sheet is rigid enough to be draped around the tripod legs or taped to supporting branches, without flapping into the picture.

Light Donation

While the search for the ideal diffusion material was a long one, getting a suitable reflector was simply a matter of going into Calumet and buying one off the shelf. Based on the high tensile steel ring design pioneered by Lastolite, the white model I use takes a gold and silver cover and a red and blue one made by the local sail company.

I rarely use reflectors to balance overall contrast (since they have no effect on highlights) and instead reserve their use for lightening shadows, as I might with fill flash. The latter, to my taste, is a bit crude for close ups and the source too small for sympathetic lighting. Moreover, a reflector allows precise viewing of the amount of fill and plenty of creative control.



From left to right; no reflector, gold reflector, red reflector, blue reflector.

The fern growing at the mouth of the sea cave needed additional lighting to improve shadow detail. As well as a straightforward white reflector, I used the rest of my range; the blue one works best for me in this set. The intensity of the red has been exaggerated by Velvia; I would have held the reflector further away (> 25 cm) to lessen its effect had I realised how strong it would be. Nikon F4, 90mm, Velvia.

Joe Cornish has coined the term "borrowed light", to describe when reflective surfaces in the shade on a sunny day pick up colours from those areas receiving sunlight. Reflectors can be used in a similar way to "donate" light to a shaded corner. Silver and gold reflectors do this more dramatically than white ones and further interest can be added by lending light with a red or blue cast. I keep an eye open for pale or reflective subjects in the shade where I can create some tension between the cool tones of the shadow and the warm ones introduced by the reflector.



Left; no reflector
Right; gold reflector

The sun had dipped low enough in the sky to cast this bog into shade but was still high enough to strike my gold reflector. In this instance, my preference is for the cooler look. Nikon F4, 55 mm, Velvia.

There are some subjects where diffusion or reflection isn't appropriate as you may have to wait as long as it has taken me to write this article for a gentian to re-open. But given film's stubborn refusal to record the world as we see it, more often than not, there is no choice.

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