

Cornfield weeds, Brechin, Scotland.
By getting rid of excess white background, it becomes easy to composite elements close together, creating a stylized representation of the species together growing in this field.



MACRO FIELD STUDIO

Creating striking images of wild subjects against a perfect white background

TEXT & PHOTOGRAPHY BY NIAL BENVIE

In the work of Richard Avedon, Jim Balog, Susan Middleton and David Liittschwager, we see the power of a simple white background, whether the subject is human or animal. Without the distraction of a background, we can concentrate on the appearance of the subject, which creates its own composition within the limits of the frame. In animal and plant photography, without the context provided by a background, the subject becomes an individual rather than the member of a species or community. It's an approach that personalizes. And it makes for very striking images.

Field studio photography—and all of this work is done in the field rather than indoors—frees the photographer from the tyranny of bad light. Strobe light means you can be productive even if the conditions would see you give up on a regular

macro shot. And if you're trying to fit your photography in around other responsibilities, that's a boon. The approach also allows you to revisit subjects you have shot many times before but to present them in an entirely different way and with an unparalleled degree of clarity.

THE TWIST: BACKLIGHT

Shooting on white is nothing new, but the twist we bring is to backlight the white background. By doing this, the translucent qualities of the subject are shown, introducing a depth that is absent in cut-outs or front-lit photographs; it glows.

In field studio work, we're also scrupulous about how we work with subjects in the field. Plants are photographed in-situ; animals introduced into the set or tank remain there for only a short time before being returned to the spot they were found.

WHAT YOU'LL NEED

This technique calls for minimal investment to get started, and the results from very simple gear are pretty much indistinguishable from those from a high-end set-up. More money buys more convenience, but not quality.

I'd recommend you learn the technique on plants before applying the principles to more active subjects. So, in addition to your normal macro gear, you'll need:

→ Two strobes with controllable output, one for lighting the background and one for front-fill.

→ A radio trigger that allows both strobes to be synchronized off-camera.

→ A piece of translucent 1/8-inch white Plexiglass with a light transmission rating of about 40 percent, at least 15x18 inches in size (this acts as the background).

→ A piece of translucent corrugated

Right, Spotted fritillary, Fliess, Austria. Late in the afternoon, this butterfly in a high alpine meadow became lethargic enough for me to place the piece of white Plexiglass behind it and make a few pictures.

Below, Field studio set in the Austrian Tirol, shooting fire lilies.

Although I have used a couple of older Lumedyne heads here, the heads can be substituted with strobes to get exactly the same effect. The only downside is carrying all of this gear up a steep hill.

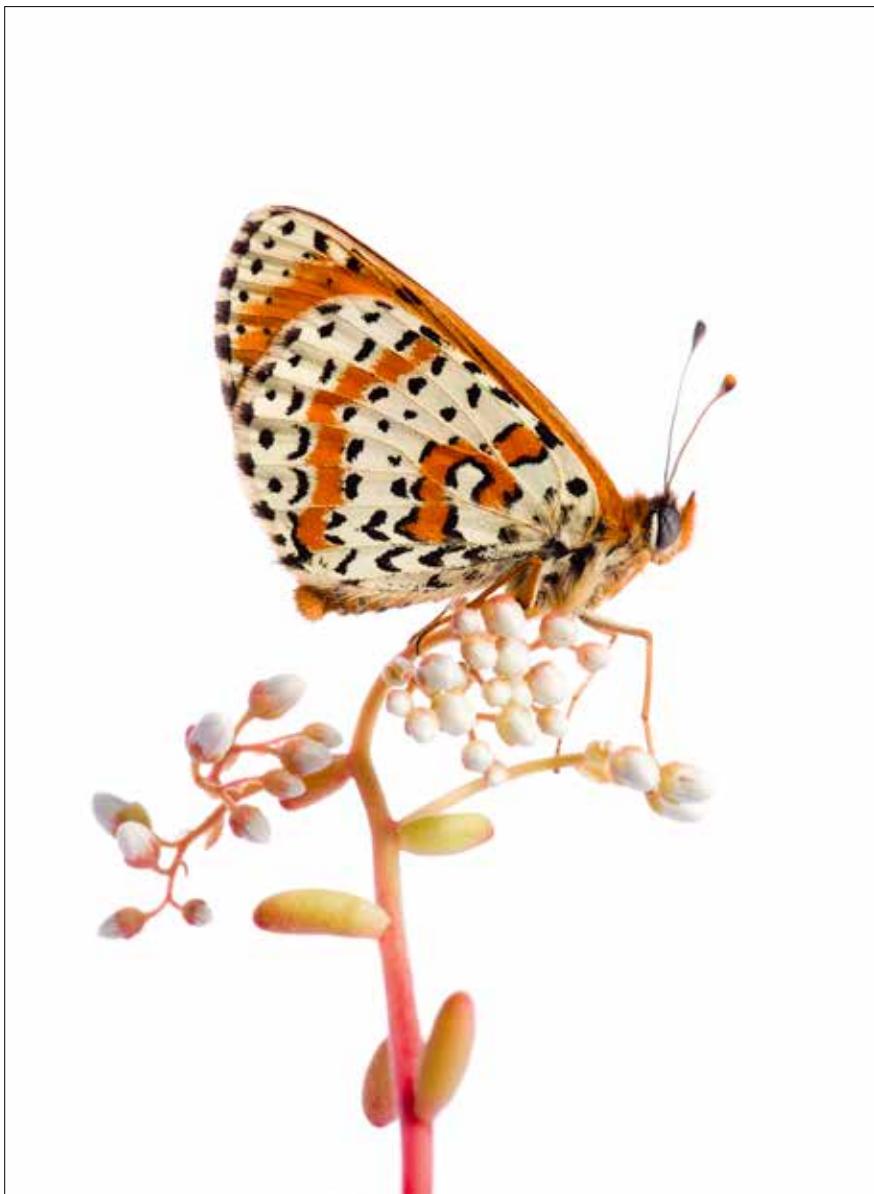
plastic sheet around 15x15 inches (this diffuses the front light).

Clamps and supports for the background and lights are very helpful too, but not vital at this stage.

KEY PRINCIPLES

When we talk about a “pure white background,” what we mean is one that is blown in all three channels: R255, G255, B255. There are two main reasons we want this. As I’ve already mentioned, a bright backlit background will make any translucent parts of a subject glow. But there are also implications for what we can do with the photograph after. If the background is pure white, it makes the matter of compositing several images together on a page—perhaps to illustrate biodiversity—a breeze. If you have tried to cut out an out-of-focus edge, you know how hard it is to do convincingly, especially if the edge is very complex (as you often find with insects). But if the subject has been shot on a pure white background in the first place, you can make a loose selection well away from its edges and drop it seamlessly onto a white page.

In this work, it’s important to understand the principle of “forward light spill.” If you create a pure white background, it’s pure white whether it is five inches or five feet behind the subject. Its inherent whiteness doesn’t change. But what does change is how much light spills forward from the background onto the subject. The closer it is, the more translucence is shown, but the risk of overwhelming the subject, of light wrapping around the edges of it in an unattractive way, is greater, too. As the background is moved further back, so the backlighting effect is diminished, but edges of the subject are likely to be better defined and less at risk



Species found at des Garriaux, Réporché, France. This is one of four composites I’ve made to illustrate the biodiversity in just one garden in this part of France. Each element was introduced on to the page in Photoshop as a Smart Object so it could be scaled, non-destructively, to fit the composition. Elements aren’t to scale—the visual balance, in this case, was more important to me.

of blending with the background if they're light. So, the principle is simple: for dark or opaque subjects, have the background close; for pale or translucent ones, have it further away. Thus, by managing distance and front light, it’s quite feasible to photograph white subjects on a white background, with intriguing results.

If you’re working with plants, it’s as simple as moving the background closer or further away. With subjects that need to be contained, however, you can’t simply set them directly onto a white background, for the reasons above, so instead I use a transparent set that allows me to manage the subject’s distance from the background.

One final point concerning the front light. The universal principle that a large light close to the subject gives softer shadows than a small one further away is relevant here. Soft front fill is the most sympathetic type of light for field studio work, hence the large front diffuser sheet. The front strobe should be held far enough behind the sheet to light it all. Ring flashes and similar setups that hold the flash close to the axis of the lens aren’t suitable for this work.

GETTING THE EXPOSURE RIGHT

Your camera’s histogram and highlight warning are your best allies when it comes to working out the right exposure. You should have values recorded on at least two-thirds of the histogram; if there’s nothing in the left half, then the picture will be too light.

1. Set the camera to shoot RAW and the exposure mode on the camera and flash to Manual. No Auto ISO, please.

2. Select a low ISO, perhaps 320, *f*/16 and your camera’s highest flash sync speed for manual units (1/200 second in my case).

3. Set the background flash to about ½ power and, with the front flash out of the way, take a test exposure. Do this by firing the flash from behind the background Plexiglass, far enough from it to light the whole sheet. The background should all be overexposed (blinking on the back of the camera if highlight warnings are enabled)—but only just. Keep reducing the power until it’s no longer overexposed, then increase again until it is, and no more.

4. Swing the front flash into position without changing any of the existing settings, and make a test exposure. Adjust

the flash’s output as needed for more or less front light or, if you can’t adjust it independently of the background flash, alter its distance from the subject until the front exposure is good, too. That equates to not overwhelming the backlight effect.

5. It should be necessary now to make only small adjustments as you shoot at different magnifications.

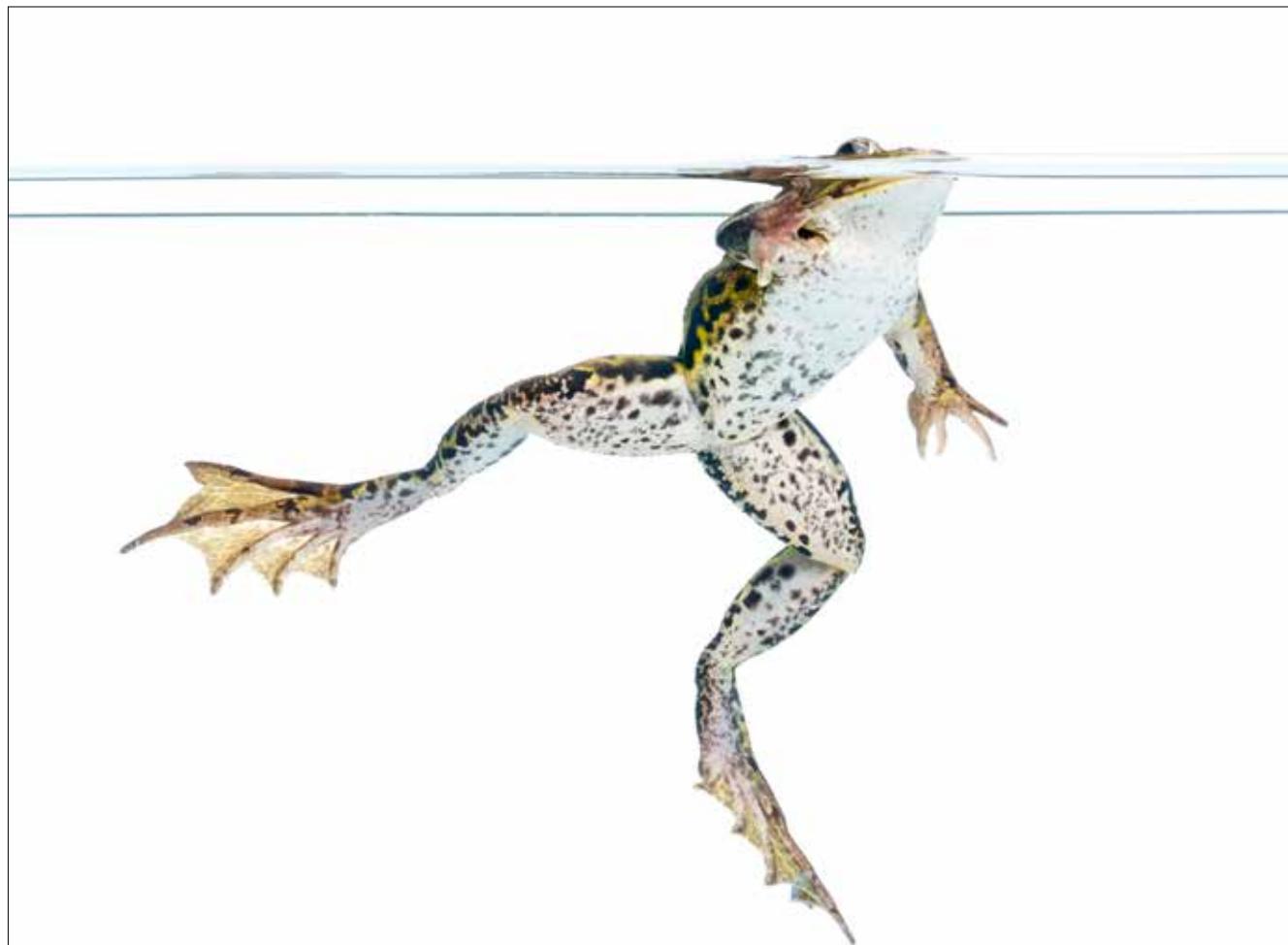
If the corners of your image aren’t as white as they should be, it may be because the pool of light thrown by your flash isn’t quite big enough. Either pull it back a little or simply crop out the corners during processing.

WORKING PRINCIPLES

There’s a bit more gear involved in this sort of photography compared

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to other macro work and hence more scope for causing damage. I tend only to photograph isolated plants or those on the edge of colonies. Rather than cut vegetation that's getting in the way, I hold it aside with small sheets of lightweight corrugated plastic held down with pebbles. If you're working with animals, set up in the shade and work out exposure before introducing any subjects to keep their time "on set" to a minimum. And, if you're working with freshwater subjects, observe strict hygiene to avoid the risk of introducing infection from one water body to another.

A WORD ABOUT PROCESSING

As Adobe Lightroom has evolved, so has its ability to recover highlight detail. In just about every type of photography this has been a great advantage, but in field studio work, it's a real nuisance—while your camera's histogram indicated a pure white background when you were shooting, Lightroom now disagrees and "helpfully" finds detail in it. Different photographers have different workarounds, but the

simplest by far (with negligible loss of image quality) is under Camera Calibration, to revert the Process Version to 2010. Make sure, too, that the Profile is set to Adobe Standard. With these adjustments made, camera and Lightroom agree on what's pure white, and the remaining processing is straightforward.

WHAT FOLLOWS

In some ways, the image you've just made is the starting-off point for something much more exciting. It's very easy to bring many subjects together on the one page to illustrate, for example, biodiversity or variation within a species in a way that just isn't possible with conventional photography. Photographer Clay Bolt and I founded an international project in 2009 called "Meet Your Neighbors," in which dozens of photographers across the globe use field studio techniques to illustrate the overlooked wildlife where they live or work, and bring it to a wider audience through various outreach schemes and presentations. The team, which includes a number of field biologists, is building

Edible frog, Préporché, France.

My parents-in-law's garden pond is home to a colony of edible frogs. I set up the tank in the shade beside it, then placed my white background about two yards behind it to minimize the effects of "forward light spill," which would have caused the fine webbing on its feet to blend with the background.

a remarkable record of biodiversity, some of which hasn't been previously recorded. You can see the work at meetyourneighbours.net.

The technique is great, too, for renewing our fascination in the familiar. It can render extraordinary detail that's hard to match in conventional photography.

With the spring season, there's no better time to dig out those neglected strobes and see your "neighbors" like you've never seen them before. **OP**

Niall Benvie's ebook, *The Field Studio*, is a comprehensive guide to the technique, available on his website at niallbenvie.com. You can follow Benvie's work on Instagram @niallbenvie.



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