

## Butterfly Gardens - Field Trip Notes

The first field trip this year was to Butterfly Gardens. Members raised two issues that we discussed briefly. I'd like to add a bit more detail on these.

**Flash Lighting:** some of the questions were on the lines of “how do I use flash with my camera”. This is very dependent on the camera and flash unit models and how they work together. This is best researched for your specific units using the manuals for them. Most current cameras will have some combination of “automatic”, balanced fill, manual and multiple flash options that may include wireless operation with specified flash units. If, after digesting the manuals and experimenting, you still have questions, you will need to search out another member with the same camera who should be able to help you.

Other questions revolved around lighting set-up. I hope to be able to address this more fully in our winter indoors “field” trips. In the meantime.... here are a few tips.

Should I use the **built-in flash**? Preferably not, these are very low power units and the light position almost guarantees rather flat lighting with “red eye” issues. They could be used for “fill” lighting with fairly close subjects, typically under about 4m away.

Do I need **multiple flash units**? Preferably, in many lighting situations you can get away with two (main and fill lights). Your camera system should be able to easily handle this type of setup.

What about “**balanced fill**”? This term means matching the level of light from the flash unit(s) to the available light. The objective is usually to “fill” shadows so that they are still there, but not as dark, so you can see detail in these areas. The opposite of this is to “overpower” the available light and use **only the flash lighting** which can be used to eliminate unwanted background detail if that is not too close to the subject. This generally requires fairly powerful flash units and a multiple lighting setup. One result of this is a black background (no lighting) with the subject highlighted.

How do I **soften the light** from a flash set-up? Flash lighting has a reputation for being very harsh, with hard-edged shadows. This is because it is generated from a single, almost point source, close to the subject. We can soften the light in various ways, using a diffuser over the flash unit, bouncing the flash off a reflector or the ceiling of a room, using multiple flash set-ups, or some combination of these. The disadvantage of these is that they all reduce the amount of light reaching the subject, but the results are often much better than using a single direct flash or poor natural lighting.

**Close-up and Macro:** For the purposes of this article I won't distinguish between the two – we are just referring to images of small objects close to the camera. The two key issues are lighting, and focusing and depth of field.

Lighting **small objects** has its challenges. You often need lighting contrast to show surface details and shapes, but generally don't want deep shadows to obscure important detail. One appropriate solution is to use diffused lighting (with a reflector) as the main light, then an angled light to catch the surface detail and cast weak shadows.

What are those **white blobs** in my macro images? When we get really close up, we are going to produce an image that is bigger than life size. That means we will see some things we didn't see before! One of these can be small specular reflections that appear as white blobs. They are not defects (dust, noise etc.), but real features. The usual way of dealing with specular reflections should work, use very soft lighting – use a diffuser or reflector.

How do I get good **depth of field** with close-ups? Well, the laws of optics dictate that the longer the focal length, greater the magnification, and wider the aperture, the less depth of field you get (depth of field is the distance between the nearest and furthest objects that are in “acceptable” focus). With close-ups we want magnification and depth of field, so we have to reduce the aperture to increase the depth of field. This of course means that we need lots of light or end up with a shutter speed that gives us problems with subject movement (wind blowing the flower, the bug crawling etc.).

Do I need to **use a tripod, auto-focus, or vibration reduction**, VR, (image stabilisation, IS)? The short answer to the **tripod question** is yes, because you probably can't hold the camera still enough to keep the subject correctly focused (depth of field).

I know lens manufacturers are now producing macro lenses with auto-focus and VR/IS, but.... With a very limited depth of field, how does the camera know **what focus areas are most important to you**, other than the one under the focus mark? Your composition may dictate that the important features don't lie in the right place, or are too small for the sensor to determine what you want to focus on, so you end up focusing manually anyway.

Given that you are going to be using a tripod anyway, **does VR/IS make sense?** VR/IS is designed to deal with lateral or vertical camera shake, not image movement, and not movement along the lens axis, which is a real problem in close-up photography because it changes the point in the subject that is in focus. So, if you are going to use a tripod anyway, vibration should not be an issue.

Having said that, you can also use a macro lens for other work where auto-focus and VR/IS may well be useful. I still use my 25-year-old f4 105 mm macro lens, it works very well, including auto-exposure on a compatible body (aperture priority or manual modes), the rangefinder focusing aid works with it as well, and I do use it for other subjects.

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