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# BITTEN BY THE MACRO BUG: GETTING STARTED

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Quick Guide  
Written by Lynne Guenther



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Photograph by Lynne Guenther

It's hot, the sun is beating on your face, sweat is rolling into your eyes, did you just swallow a gnat? Probably, as well as some other small creatures, or at least inhaled a few.

If you want great photos of insects you must go where they live, and it can be a bit unpleasant at times. Photographing insects in their natural environment and under natural light is the easiest and cheapest way to get started. Since shooting macro usually requires manual focus and settings, it's better not to overwhelm yourself or your pocketbook with advanced techniques before deciding if you have the patience and stamina for "shutterbugging," pun intended. ;)

In this article (the first in a series of 10 on insect photography), we'll discuss the attributes, skills, and equipment needed for insect photography, including:

- mental and physical requirements,
- access to insects and ideal conditions,
- what to wear/what not to wear,
- required camera skills,
- basic gear (more advanced gear will be discussed in future articles), and
- basic editing abilities (more advanced editing will be discussed in future articles).

 **Recommended Reading:** If you'd like to improve your composition skills for better images, grab a copy of Photzy's best-selling premium guide: [Understanding Composition](#).

### **It's not cross-fit, but...**

Mentally, you'll need to be ok with the idea that you may take 200 photographs to get one that you're proud enough to share, AND it took four hours. Not only will you need patience to interact with insects, but also an ability to pass the mannequin challenge while 15,000 mosquitos feast on you. Did I mention that you'll probably be squatting for the majority of the time? It helps to be a Zen master and have good knees!

I know, I know, I'm not making this sound very appealing, but once you find an insect you've never seen, or maybe just never really looked at closely, you'll be hooked. And don't worry, future articles in this series will outline capturing bugs and lighting indoor studio sessions for those "allergic" to the conditions described above.

**Good news:** Although I HATE, HATE, HATE sweating, mosquitos, and squats, I barely notice any of these things while in the zone. **Better news:** Once you've got some practice, you can get four or five amazing images in 45-60 minutes. **Best news:** Unlike landscapes, you don't have to go very far to recompose or find another subject.



Photograph by Lynne Guenther



Photograph by Lynne Guenther

## IDEAL CONDITIONS

Unless you have a home garden, you'll be trekking to your nearest wooded area, preferably one with a stream, on a warm and windless day. Macro requires narrow apertures due to extreme closeness to the subject, so light must be replaced via shutter speed (SS) or ISO. Slow shutter speeds are preferable to avoid high-ISO and noisy images lacking sharp clarity, so windy days make it nearly impossible to get crispy sharpness.

You don't necessarily have to go far. In the U.S. many urban areas have wooded public parks, and suburbanites generally have an area within their own subdivision set aside for conservation. Just look for trees and a small moving water source.

Unfortunately, this is also the ideal location for mosquitos, which is why many insects make it their home. Spiders, dragonflies, and many others feed on mosquitos and their larvae. **Here's the killer: you shouldn't wear bug spray. The smell can drive away ALL insects. So also avoid perfumes/ colognes, strong smelling soaps, deodorants, lotions, aftershave, and sunscreen.**

Ok, **brace yourself**, snakes also enjoy this type of ecosystem. Luckily, I've only ever seen one and it was non-poisonous and slithered away into the water the second it saw me. Also, familiarize yourself with poison ivy and oak characteristics as they can be present in this environment. This fact along with my anti-bug spray/sunscreen policy means jeans and sneakers make more sense than shorts and flip flops. Look for odorless or low odor sunscreen for your face and arms if you burn easily, but you'll likely find yourself in shade much of the time (being under a canopy of trees). I'd also suggest a sweatband to keep the burning eyes at bay.


You'll need to approach the general area **quietly, slowly, and softly** to avoid crunching twigs under your feet. You should research where specifically to hunt based on the insect you are looking to snap. Dragonflies, for example, are usually close to water and perched on the tips of tall sticks, reeds, or occasionally sitting on a leaf. The monarch caterpillar is only found on the milkweed plant. In a case like this, it's a good idea to look up the distinctive purple flowering plant.

There are some insects that don't require wooded areas, such as bees, butterflies, and katydid nymphs which can all be found pretty much anywhere that flowers live. Certain insects like the cucumber beetle prefer vegetables; although I have also found them in my own bushes. Make sure not to waste any opportunities. Some bugs you might consider common or pests can still make great subjects even on your patio furniture, like the wasp in the cover photo.

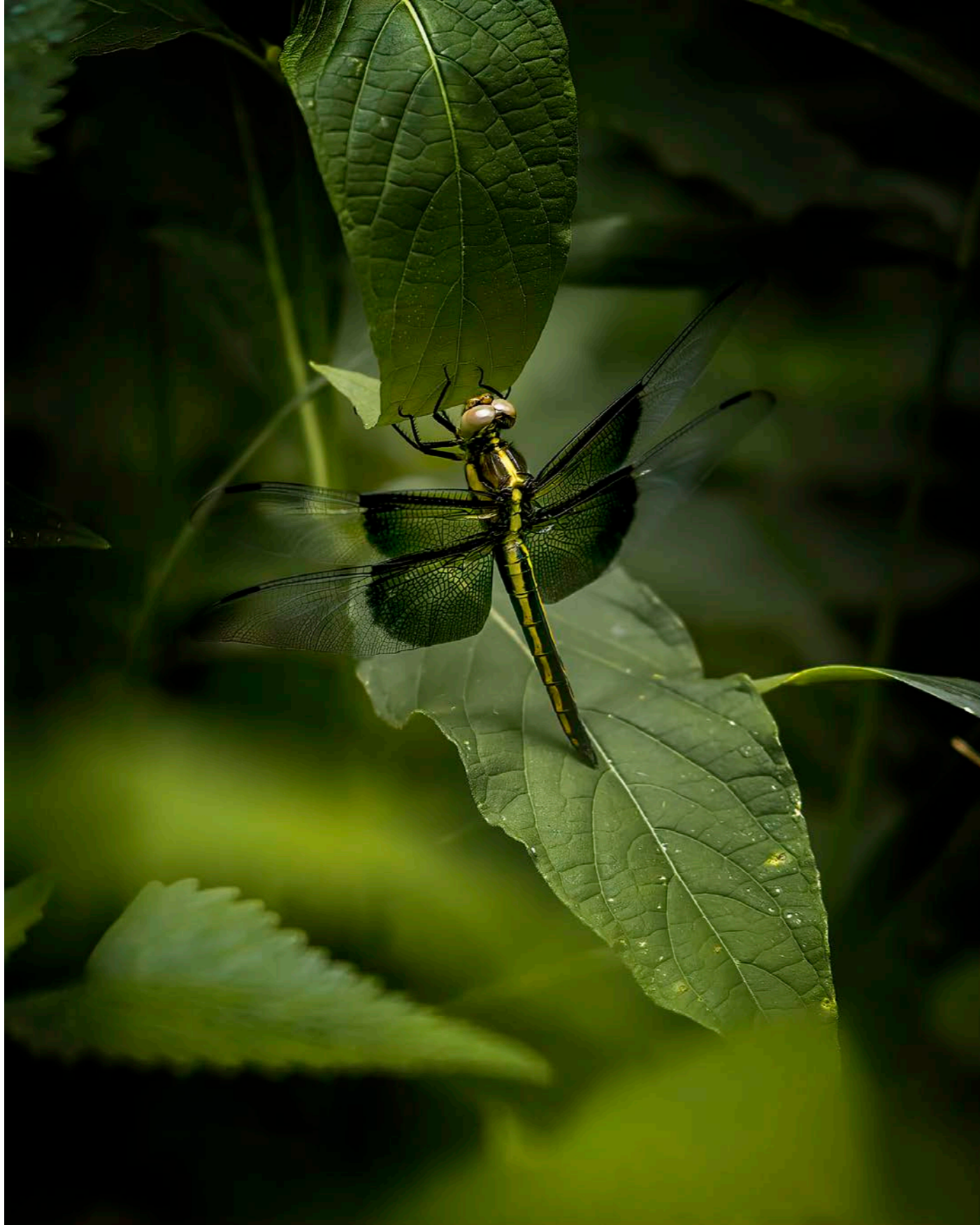


Photograph by Lynne Guenther

Regardless of the specific area outdoors, it's usually best to look in the **shade to avoid harsh, uneven lighting** without the need to carry a diffuser, unless it's overcast, which makes for a wonderful natural diffuser, particularly in the case of insects such as dragonflies, which are most active at mid-day. I would suggest **starting with dragonflies because they almost always return to the same perch**, so if your subject flies away it will more than likely return in just a few seconds. This perch behavior allows for a slower shutter speed which is very beneficial since macro comes with lighting and depth of field deficits. The image on the next page has a shutter speed of 1/250 on an 85mm prime lens with zero evidence of motion blur.

 **Key Lessons:** Look for moving water and trees on warm, bright, windless days. Overcast is great, but shade suffices if it is sunny. Most insects are most active and easiest to find at mid-day. Minimize smells and sounds. Protect yourself from the sun, other wildlife, and poisonous plants like poison ivy. Research insect behavior.





Photograph by Lynne Guenther

*Image taken at 1/250 SS on 85mm lens without motion blur. A rare sight, as dragonflies generally prefer sticks to leaves.*

## CAMERA SKILLS

Macro requires narrow apertures (high f stop) to compensate for depth of field loss as you get closer to the subject, which causes every microscopic particle on your lens and sensor to show in the image. It's important to start with **clean gear** (or you'll spend a lot of time with the spot brush in photoshop).

Additional light is lost with the use of extension tubes. However, due to their magnifying capabilities, they are a necessity for every macro photographer, even with a dedicated macro lens. So, what do these light limitations mean for exposure?


You'll want to shoot at the **slowest shutter speed possible, so wind is out of the question** and manual mode is a must. There are no perfect settings, but I'd recommend starting at a shutter speed twice the reciprocal length of your lens (1/200 for a 100mm lens) and f8 for shorter lenses/wide open for long lenses. From there you can adjust the aperture as


needed and increase shutter speed if camera shake or motion blur is present. ISO is chosen after the necessary aperture and SS have been determined.

Of course, the above settings are for cooperative sitters. You'd be surprised at how many you'll find who don't give you a hard time. If you're going for an insect in flight, or while feeding or being active, you'll need a much faster SS – anywhere between 1000 and 3000 depending on the speed of the particular insect. At this point, ISO must be increased and may result in some noise. Noise obscures details and generally makes the image look less sharp. Many insects have details that measure only 10 pixels, so you can see how four pixels of noise would make the details less sharp.

You'll also need to be familiar with **continuous or burst mode**. **Turn your camera to silent shooting and electronic curtain** if it has these features and prepare to use **back button focus** when possible. You should definitely **turn off the "focus with shutter"** feature. I've found back-button focus to work well with my Sony a7iii when using a 300mm lens with extension tubes for larger insects. Almost every other case will require **manual focus**, sort of.

The fastest way to focus in macro is not by using the ring to control manual focus, but rather your camera position, or even body position. I like to choose the manual focus setting first, frequently the closest possible focus, then **lean my body in slowly until the area is in focus**. I rock back and forth as needed. Focus peaking is helpful if it's available on your camera.

 **Key Lessons:** Macro work requires understanding of the exposure triangle, manual settings, manual focus, and understanding your camera's modes and features. Clean your lens and sensor.

 **Recommended Reading:** If you'd like to improve your composition skills for better images, grab a copy of Photzy's best-selling premium guide: [Understanding Composition](#).



Photograph by Lynne Guenther

*Two extension tubes in yellow, reverse mount ring in red, back side of lens in blue.*

## BASIC EQUIPMENT

It is definitely **not necessary to buy a macro lens**. I have two but use standard lenses with inexpensive adaptations just as often. Here are the two best and cheapest products to adapt a standard lens to macro: the **extension tube and the reverse mount**, both illustrated in the photo on the left. Variations of the reverse mount using two lenses for increased magnification are very effective but much more difficult to use; therefore, this technique and others will be discussed in an article dedicated to equipment.




Photograph by Lynne Guenther

An extension tube is a spacer that goes between the camera body and the lens. **It shortens the focal length of the lens allowing you to get closer to the subject by increasing the distance between the sensor and lens.** They come in versions that can “talk” to the camera and “dumb” versions that require you to set your aperture before adding the tubes. This means that it requires a lot of work to change apertures unless your lens has an aperture ring (unlikely in newer basic equipment). For this reason, I suggest getting extension tubes with autofocus abilities. They start at \$30 for two of different sizes. I find a total of 26mm is sufficient for most situations.

The other option is the **reverse mount**. This is a very inexpensive, yet unintelligent piece of plastic that allows you to mount your lens to the camera body in reverse. Why? The lens is designed to make bigger life-sized objects appear on a small sensor, effectively “shrinking” the scene. So, by reversing the lens, it makes small things bigger. This is a great option to use with a light inexpensive prime wide-angle lens like a 28mm, if you own one.

Both have unique advantages. By using a reverse mount on a small prime lens, you preserve light in two ways. First, you haven't increased the distance to the sensor so there is no additional loss like with extension tubes. Second, the overall length is shorter allowing for slower SS when handholding. However, reverse mounts are attached using filter threads and, unfortunately, the sizes vary from lens to lens meaning **you'll need one for each lens**. Also, this connection **cannot communicate with the camera body**, so changing aperture is no easy task.

The biggest upsides of extension tubes are that **one set will work with all your lenses and the camera body**, allowing for fast aperture changes and lens swapping. Another more controllable aspect is that extension tubes can be stacked. You can use a 10mm, 16mm, 36mm, or stack them to get 26mm or 52mm. The more extension tubes, the closer you can get, and the bigger the subject is in frame. However, the depth of field will get very shallow. In some cases, f22 will only get 1mm or 2mm into focus. This is true regardless of the technique used. Extension tubes are easier to work with when getting started, in my opinion.

 **Key Lessons:** “Smart” extension tubes are my preferred method of converting lenses for macro. Depth of field is much shallower per the f stop as you get closer to the subject.

## BASIC POST-PROCESSING

I know the idea of post-processing is scary for some and you may prefer **allowing the camera to process your image as a jpeg**, but even when shooting jpeg, macro requires a little more love and care. Because macro generally requires a narrower aperture, macro images are going to have **dust spots that need to be removed**. Not only are spots present on the lens, but also dust and fibers can be seen on the subject (top image on the next page). Luckily, this is as simple as clicking on the spots with a healing brush in most editing suites.

You may be a fan of the in-camera crop, but that's a difficult thing to control when first starting out. Until you're familiar with your new extension-tube-enhanced focal lengths, you're unlikely to fill the frame at first. Composition can be difficult as well due to the short duration that the subject is available and still. Learning to **crop for composition** will greatly enhance the final image, as shown on the next page (bottom image).

As your skills improve, time will seem to slow down, allowing you to compose in-camera; however, shooting in raw and basic editing is still advised. Imagine a lively butterfly stops briefly but your ISO is a couple of stops low; you can take the time to increase your ISO but you might miss the shot, or

you can take the shot and pull up the shadows and whites in post-processing. That being said, details and colors will not be properly captured if you are way off, but this is helpful for shots that were properly set up just before a cloud rolled by as you snapped.

**Auto ISO, you say?** With macro, the light meter rarely provides an accurate description of the scene. Insects are usually in more shadow than the surroundings, and it's frequently the shadow of the lens (yes, most great bug portraits are taken with the lens just a few inches from the insect). The meter will see the scene as a whole unless the mode is changed. We will discuss this option in depth in a future article as well as lighting the subject, but for now I would suggest using live view to adjust exposure for the subject. Or if you really want to use auto ISO and standard metering, use the **exposure compensation dial**.

Learning to **free rotate** can have a huge impact on composition, as our example image illustrates. I'll give step-by-step instructions for editing in Photoshop in the last article or two. Finally, the **manual sharpening** of compound eyes, hairs, and other details make for a much more impressive final image.



Photograph by Lynne Guenther

*Cover photo original compared to final edit. Notice the crop, free rotation, removal of fibers, and sharpening.*

**◆ Key Lessons:** Post-processing in the basic sense is a requirement to polish the fine details in macro imagery and improve composition. Auto ISO is frequently inaccurate. Learn metering modes or use manual ISO control instead.

**👤 Recommended Reading:** If you'd like to improve your composition skills for better images, grab a copy of Photzy's best-selling premium guide: [Understanding Composition](#).

## CONCLUSION

Macro insect photography can seem overwhelming at first, but with some practice it is very rewarding. After mastering settings, modes, and manual controls, you'll be back to consciously thinking about composition and creativity faster than you think. Eventually, two minutes with an insect will feel like an hour. Achieving a distance of two inches for two minutes is less difficult than expected once you learn to move slowly.

**Most insects don't see us unless we move, smell, or make a noise.**

Photographing insects requires:

- a suitable environment;
- patience and stamina;
- knowledge of insect behavior;
- knowledge of health and safety risks;
- complete understanding of the exposure triangle;
- complete understanding of your camera, its features, and manual control;
- complete understanding of how depth of field relates to the distances between the sensor and subject, and the subject and background;
- complete understanding of focal lengths and the reduction caused by adding extension tubes;
- hardware to convert a standard lens;
- steady hands; and
- basic post-processing skills like spot removal, free rotation, increasing brightness without introducing heavy noise, and sharpening.



## Self-Check Quiz:

- 1) Should you shoot insects from above, below, or at their eye level?
- 2) Where can you find a diverse population of insects most easily?
- 3) What do you need to protect yourself against for health reasons?
- 4) Which weather condition is least ideal: a sunny day, windy day, or overcast day?
- 5) Which camera features should you turn on/off?
- 6) Which component of the exposure triangle should be adjusted last?
- 7) Which macro hardware solution reduces light?
- 8) Why is depth of field less shallow in macro?
- 9) What will noise do to macro details?
- 10) What should be the final post-processing step?

## Assignment:

- 1) Shoot an insect from below, above, and at its level.
- 2) If you have a short and long lens, or a zoom lens, shoot an insect at different focal lengths and notice both your distance from the subject and the resulting depth of field.
- 3) Take any existing image you own and use free rotation and content-aware fill cropping to enhance its composition.



# Hey there!

Let's get real for a minute... Learning photography can be super challenging! But we're here to help you every step of the way! Here are 3 of our most useful (*and FREE!*) photography resources:



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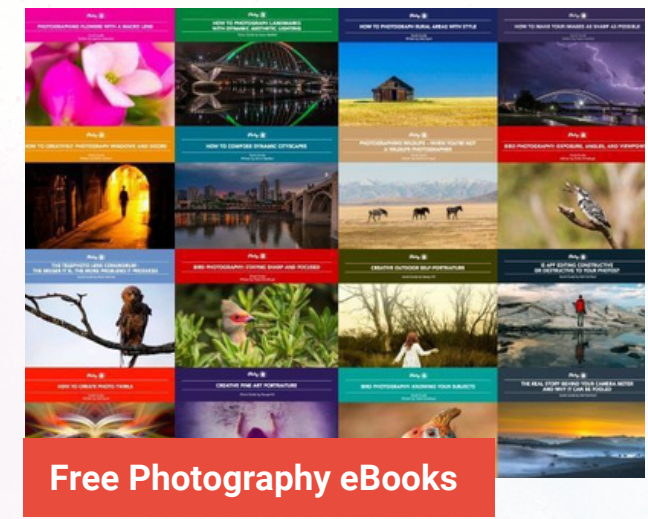
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## ABOUT THE AUTHOR



Dallas native Lynne Guenther is an internationally exhibited fine art nature photographer specializing in macro photography. She is an unapologetic champion of editing as a valid means of storytelling, and has been published in *Dodho* magazine; exhibited in Amsterdam, Venice, Berlin, and Dallas; and has earned recognition by jurors such as Carl Buchberg, retired senior curator at MoMA.

Lynne's greatest passion is for the creation and appreciation of art. Lynne and her husband are active patrons of living regional artists. They have been recognized as prominent donors by the Dallas Museum of Art. Lynne loves learning and continues her education in life, art history, contemporary art, and all aspects of aesthetic expression.

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