

Overcoming Flash Fear: Avoiding Caves And Ghosts For Better Photos

By Tom Stephenson and Scott Whittle

DSLR cameras are becoming ubiquitous these days in the birding community. We were at Magee Marsh in May photographing warblers for our upcoming Warblers in Real Life book and apps, and it seemed that two-thirds of the birders there had long-lens digital SLR camera rigs.



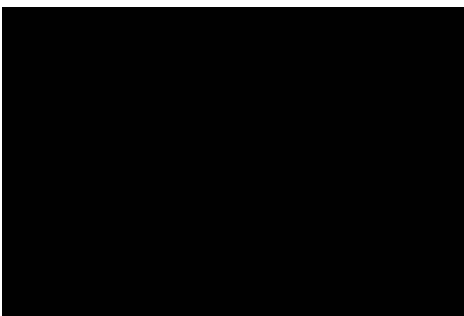
Typical gathering of birders with cameras...two Canons, one Nikon

In general, these cameras are a boon to the birding world – they help with the identification process, create a vast and unprecedented documentation of the birds of the world, and are fun! Of course, that doesn't mean they are easy to use, especially in difficult lighting.

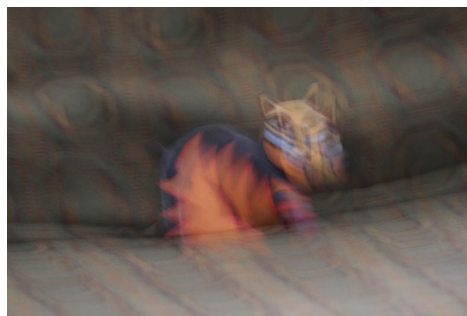
Getting a sharp, beautiful photo on a sunny morning is often not too difficult. But shooting on a dark, overcast day, or in the deep shade of the woods, can be downright tough. Oftentimes our photos wind up blurry (despite good focus), too grainy, or just weirdly lit – more photos for the “outs” pile. The problem is that many of the options we have on a sunny day disappear as the light fades, and we are left with only high ISO settings that result in grainy shots, or a slow shutter speed that guarantees blurry photos. There is a solution that can solve all those problems, and that solution is flash.

For many photographers, overcoming “flash fear” is the single most important way to improve their photos. In this article we'll talk a little about external flashes and their accessories, show you some basic settings for getting great flash photos, and explain some of the details of how it all works. In the next

article, we'll discuss the benefits of using fill flash in brighter light.



1/250th no flash: too dark



1.2 sec no flash: blurry camera shake



1/250th with flash

THE GEAR

First, what gear do you need for flash photography? The built-in flash on many cameras certainly will work, but with limited success and only when the bird is very close and the ambient light isn't very high. This may be a good place to start, but to really get the benefits of flash photography we recommend an external

flash. For Nikon or Canon systems, use one of their dedicated flashes, and buy the best flash you can afford. Unfortunately, bird photography tends to demand the best possible performance from your photographic gear, and that comes only from fairly expensive cameras, lenses, and yes, flashes.



Canon flash setup augmented with a Better Beamer and external battery.

Once you've chosen a flash, there are two excellent accessories to add. The first is a dedicated external battery pack that uses AA batteries. Canon and Nikon both make battery packs for their flashes that are lightweight, and can be carried in a pocket or attached to the camera's strap. We highly recommend using Sanyo's Eneloop batteries in these packs, which are not only rechargeable, but won't discharge over time if they aren't being used. Using a battery pack, we find we can often shoot multiple shots with flash in quick consecutive order without having to wait for the flash to recycle.

Second, a Better Beamer is a must, especially in brightly lit situations or distant, poorly lit birds. The Better Beamer is a magnifying lens that attaches to the front of the flash, and improves output significantly when using long lenses. They provide a much greater flash range, as well as faster recycle times, and thus are a very inexpensive way to boost flash performance.

USING FLASH IN LOW LIGHT

Now that we have a flash setup, let's look at a typical problem situation where flash can help. It's May, and we're in Ohio admiring the fantastic spectacle of a good warbler day on the famous boardwalk at Magee Marsh. We're especially excited to have windy, wet weather, which has driven many of the warblers to eye level and below; very close for photographs. The problem is the weather that's bringing the warblers to us is also reducing our available light, which was already limited by the forested setting.

Without a flash, chances are that most photos are going to be either blurry or very grainy. In low light, our shutter speeds get slower, and if they drop under 1/500th of a second, a lot of the photos we take will probably be soft. Of course, we can open up the lens to a low f-stop (like f/4) and let in more light, but lenses all have limits to the size of their largest f-stop, and even if we had a very expensive and heavy lens like the 300mm f/2.8, we still probably wouldn't have enough light to give us a fast enough shutter speed. We could use a tripod, but below a certain shutter speed the problem won't be camera shake (which the tripod can limit), but blur from the bird's movements. Finally, we can even raise our ISO (the sensor's receptivity to light...equivalent to film speed in film cameras), but for most SLRs going over ISO 800 means we wind up with photos that are grainy, and look less detailed. In other words, without a flash we're stuck.

Happily, using flash can solve these problems. By adding our own light to the photo, we can turn the situation completely around. Now we can shoot at a normal ISO and f-stop, and still get sharp, low-grain photos that freeze the bird and eliminate camera shake.

As a starting point, we suggest you use the following settings when taking pictures using a flash in low light (we'll explain these settings momentarily). First, put your camera in Manual Mode. This gives you complete control over the exposure time and F Stop, and prevents the camera from trying to "help" you by raising the exposure time. Next, set your f/stop to 5.6 and your shutter speed to 1/250th of a second. Make sure your ISO is at 400 and that Auto ISO is off. Set your flash to TTL or its default basic setting.

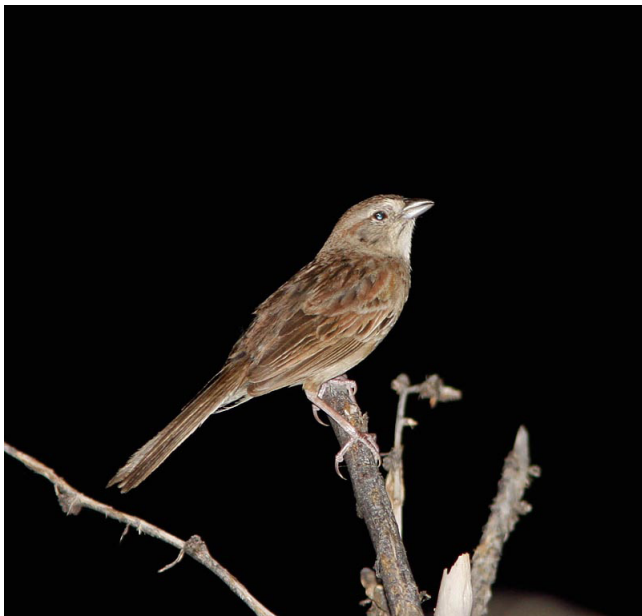
One last point: whenever we use flash, we like to keep our shutter release on single shot (instead of continuous high or low), since firing many frames per second will quickly outpace the flash's ability to recycle, and may even overheat and damage the flash.

That's it! You can now start shooting in low light conditions and you should have sharp and well-exposed photos.

Now let's go back over and explain the reason for these settings, starting with shutter speed, and then we'll talk about refining those settings for a specific situation. Some of you may be thinking, "If we want to shoot at a high shutter speed to freeze the bird and get sharp photos, why are we using 1/250th when we use flash? Won't that lead to blurry photos?" It's true that, without a flash, 1/250th would almost always be too slow in low light situations. But it's a different story when you use flash. First of all, in basic flash mode, all cameras limit the speed of the shutter to around 1/250th of a second. The reason is complex but simply put, if we shoot at a faster speed, the shutter will actually be "out of sync" with the flash and part of the image may get cut off.

But here's the magic of using a flash: the shutter speed actually doesn't matter! When almost all of the light for your exposure comes from the flash, it's not how long the shutter is open, but how long the flash takes to fire that determines whether the image is sharp. And the duration of most flashes range from 1/800th to 1/10,000th (!) of a second – plenty fast to freeze most birds. So it doesn't matter that the shutter is open for 1/250th...the speed of the flash is fast enough to give you a sharp photo.¹

So the bird is sharp because of the flash, but what about the background? If the flash doesn't reach the background behind the bird, won't it be dark? And even if it does reach the background, won't it look "flashed" and unnatural? The answer is "yes, unless you control your ambient light". It's simple to balance the ambient background light with the primary exposure light from your flash – let's discuss that now.



This Cassin's Sparrow shot shows the "cave" effect: the camera settings didn't let in enough ambient light, and made the background go black.

Once you get your flash working, there are two problems you may find in your photos: we call them "caves" and "ghosts" (sounds like Halloween, doesn't it?). In "cave" photos, the bird looks like it was shot in a cave...i.e. the background is totally dark behind the bird. This is not a very natural look, and probably not what you saw when you took the photo.

In a "ghost" photo, you often see a little softness, or even some ghosting or "double imaging". The photo looks like two photos of the same bird were layered on top of each other. In fact, that is exactly what has happened, and provides the clue to a solution to both of these problems.

¹ For you advanced users, the duration of the flash is directly related to the power that the flash outputs. For a full-power pop (ie. 1/1), you get the longest duration of flash (something like 1/800th), while for a lower-power pop (like 1/16) you get a roughly proportional shorter flash duration (in this case, 1/6000th). This can be a useful bit of information for shooting birds that are particularly small and quick...hummingbirds come to mind.



So how many wings does this Calliope have? Notice that the body, which was relatively still, is fairly sharp, even though ambient light and the flash exposed the wings in different positions.

When that flash goes off at 1/800th or faster, it freezes your subject. The problem is that the camera shutter still stays open for 1/250th of a second, and therefore lets in any background light there may be, creating a “second exposure” on top of the flash photo. So in effect you’re working with two “layers” of exposure. If there is too much light in addition to the flash, and you or the bird are moving, then you will have a blurred or ghost effect. But if there is too little light, the bird will look like it’s in a cave.

How do you stay out of the caves and fight off the ghosts? Easy – by changing your *f*/stop and/or your ISO settings. First, note this very important point: when you use a flash in dim light, the flash will take care of itself. In most situations you don’t control whether the flash is “brighter” or “darker”. If your flash is working correctly and the subject isn’t out of range, the flash will expose the bird perfectly almost every time. What you can control is the background light. And you do that by adjusting your *f*/stop and your ISO.²

So if the image looks like it was shot in a cave, try lowering your *f*/stop – for example to *f*/4 (if you can). This will let in a bit more ambient light. If the background is still too dark, try raising your ISO, for example to ISO 800. This will amplify the camera’s sensor thus increase the amount of light captured during that 1/250th of a second, and the photo should look more natural.

If your image looks a little soft (and you’re sure your focus is good), or if you’re getting ghosts, try raising your *f*/stop or lowering your ISO (you might go to *f*/8, or ISO 200, or both). Either of these will decrease the amount of extra light let in from the background, and will help freeze the bird. Be vigilant when you check for softness – sometimes images that appear sharp are actually a little soft, so be sure to zoom in when you look at the image on your camera’s monitor.

We find that in most low-light situations, we can work in a range of *f*/4 to *f*/8, and use ISO settings of 200 to 800, and get the right amount of background light for our photos.

In either case, the key point is that you’re adjusting the level of ambient light, not the flash. If you want to quickly see the “two layers” of your exposure, just turn off the flash (leaving your settings on manual) and take a shot. This is the background light that’s being let into the exposure. You can raise or lower it by changing your settings, but remember that you want it to be darker than normal. If you want to be precise about it, we find that when our settings make the background light 2 stops darker than normal, that gives us a good balance using flash. Now turn on the flash and you’ll see how the background light affects the image, even though the flash itself hasn’t been adjusted.

² Note that this is the opposite of using flash as a fill-light in bright light situations...in that scenario you set your ambient exposure, and then adjust the amount of flash that you “layer” on top of it.



This shot allowed less ambient light in, making the background darker, while the bird stays properly exposed.



This White-eared Hummingbird has a lighter background because the camera settings allowed more ambient light in. Note how both these hummingbirds are correctly exposed, separate from the background.

Here are a couple more tips when you use flash in low light situations. First, don't go over 1/250th of a second. Even if you're using high-speed sync or Auto FP settings that allow for faster shutter speeds with flash, the output will be greatly reduced. (We'll discuss the effective use of those settings in the next article). Second, try and keep the aperture at f/8 or below. Anything higher and you're asking the flash to put out a very powerful pulse, and that is going to cut down its range and increase the recycle time.

To sum up, flash is a critically useful tool in bird photography. It can help you get images that would otherwise be impossible, and improve images that might otherwise be unacceptably lit. In dark situations, the flash provides all of the light and the speed we need for the primary exposure. We use f/Stops or ISO to increase or decrease the level of ambient light that gets incorporated in the image, and thus remove the cave effect or prevent ghosting. A good starting point is:

- Manual Mode
- Flash on in standard or basic TTL mode
- 1/250th second
- f 5.6, with the option to try f/4 or f/8 to control background light, ghosting and caves
- ISO at 400 to start, with the option to try ISO 200 or 800 to control background light, ghosting and caves

Hopefully by now you see that flash can really save the day in any kind of dim-light situation where you can't get a fast enough shutter speed. But what about sunny days, when shutter speed is not a problem? Is there any reason to use flash then? The answer is absolutely!

In bright situations, we do the opposite: leave the camera's settings alone, and adjust the flash to add as much or as little additional light as we'd like to fill in harsh shadows or just make some of the detail "pop". We also use a "secret" setting called high-speed sync that lets us get around the 1/250th of a second shutter speed limit. We'll explain in detail in our next article on using flash in bright light.

In both cases, using flash adds a whole new layer of creative control to our images, and is an excellent and important tool in our photographic bag of tricks.