Shooting Birds (with a Camera)
A Beginner's Guide to Bird Photography
by John Strung

1. Where to find Birds to Shoot

Bird photography is usually best done in the morning or evening. Birds are less active mid-day and the high lighting makes getting a good shot difficult at that time of day. When shooting, try to position yourself so the sun is behind you as photos of backlit birds seldom turn out.

The Hamilton/Burlington area is a great place to shoot birds.

In the spring and fall migrations, large waterfowl can be found within camera range at the ponds at the west end of Spring Garden Roads where it meets
Valley Inn Road –

https://www.google.ca/maps/place/43°17'21.3%22N+79°53'10.4%22W/@43.289264,-79.886205,16z/data=!4m5!3m4!1s0x0:0x0!8m2!3d43.28926!4d-79.88621?hl=en

(Spring Gardens Rd. runs behind the R.B.G off Plains Road). If you go down there any morning in the spring or fall, you are likely to find a club member with a camera who will be happy to give you tips.
If you follow the trail Grindstone Marsh Trail east from the ponds to the boardwalk in the **Hendrie Valley** -

https://www.google.ca/maps/place/43°17'41.1%22N+79°52'44.4%22W/@43.294746,-79.878995,16z/data=!4m5!3m4!1s0x0:0x0!8m2!3d43.29475!4d-79.879?hl=en

you will find all sorts of very tame small birds that can be easily persuaded to eat seed out of your hand and make good subjects for photography.

Lasalle Park -

https://www.google.ca/maps/place/43°18'03.7%22N+79°50'43.8%22W/@43.30104,-79.8476887,17z/data=!3m1!4b1!4m5!3m4!1s0x0:0x0!8m2!3d43.30104!4d-79.8455?hl=en

(on Burlington Bay at the foot of Waterdown Road) is excellent in the spring until the marina puts in its floating docks.

In January and February there are hundreds of long-tailed ducks as well as a variety of other waterfowl under the Burlington **Bay lift bridge** -

https://www.google.ca/maps/place/43°17'53.6%22N+79°47'45.6%22W/@43.29823,-79.7981887,17z/data=!3m1!4b1!4m5!3m4!1s0x0:0x0!8m2!3d43.29823!4d-79.796?hl=en

and at the end of the pier at the lake side. Parking is available south of the bridge.

Another area that is good in the spring is
Windermere Basin -

https://www.google.ca/maps/place/43°16'01.0%22N+79°46'35.8%22W/@43.26693,-79.7787887,17z/data=!3m1!4b1!4m5!3m4!1s0x0:0x0!8m2!3d43.26693!4d-79.7766?hl=en

There is a parking lot on the west side of East Shore Drive north of Woodward Avenue.

If you go to one of these locations and see a number of photographers with large lenses, you will know you are in the right place at the right time. If there is no one around that meets that description, it may be the wrong time of year for that particular venue.

The Bird Photography Special Interest Group will be organizing some outings which will give you an opportunity to visit some of these places and get tips from more senior members of the club.

Also see the Hamilton Naturalist's Club List of Birding Locations - http://hamiltonnature.org/birding-locations/

2. Equipment

Unfortunately, shooting birds requires good equpment. Birds, unlike stationary objects, generally will not let you get close enough to get a good shot with a short lens. A DSLR with a 200mm lens is pretty much a bare mininum for occasional birding, but a longer lens, say 300mm or 400mm is much better.

If you find that you are getting serious about shooting birds, good entry level lenses for bird photography with a Canon DSLR would include the Canon EF 400mm F5.6L USM (about $1,500) or the Canon EF 100-400mm f/4.5-5.6L IS USM (about $1,700). Both can be found for less on sale from time to time. The EF 400 is a "prime" (fixed-length) lens. The EF 100-400 is a zoom. The advantage of the prime is that it is cheaper, lighter and slightly sharper than the zoom, but less verstile as you cannot zoom out if the bird gets too close. As well the 100-400 zoom lens has image stabilization, which the 400 prime does not. For Nikon, a good choice is the Nikon 300MM F4 IF-ED AF-S at about $1400. Other manufacturers have similar lenses. Third party lenses made by companies like Sigma may be a cheaper alternative (and have a longer warranty), but do your on-line research for reviews before buying.

Oddly enough, the best cameras for birding are usually not the more expensive full-frame cameras, but the cheaper APC sensor cameras (also called crop-factor cameras). The advantage to the APC sensor cameras is that their smaller sensor has the effect of increasing the reach of your lens by a factor of 1.5 (Nikon) or 1.6 (Canon). So, for instance, the image from a 400mm lens on a Canon APC camera would be the same effective size as the image from a 560mm lens on a full frame camera. (The full frame cameras, however, may be better in low light because typically they can be shot at higher ISO without showing grain.)

Fill flash can also be helpful in bringing out the areas of a bird in shadow and adding catch lights to the eyes. With a long lens (300mm or longer), you will need a device called a "**Better Beamer"** -https://www.bhphotovideo.com/c/search?Ntt=visual+echoes+better+beamer&N=0&InitialSearch=yes&sts=ta
to increase the distance your flash will carry, but these are relatively inexpensive. These are not readily available in camera stores, so you may have to order one on-line.

It is also a good idea to get a big card for your camera (minimum 8GB, or better still, two 8's so you have a spare). If you are shooting birds in flight using RAW and the high-speed continuous shutter setting, you can easily shoot several hundred shots in a few hours, which will fill a smaller card very quickly. (The experts will tell you that they are lucky to get a few good shots out of a hundred shots of birds in flight - it is not easy - so you need to take lots of shots.)

But by all means, give it a try with your existing equipment first

3. Shooting Birds in Flight

Shooting birds in flight requires different camera settings from shooting stationary birds. Here are some suggestions:

(a) Camera Program Setting

Set your camera to the M (Manual) setting. The reason for this is that auto-exposure does not work reliably when shooting birds. Auto-exposure will more likely than not expose for the background rather that for the bird, because the bird is normally so small in the frame, or it may expose for the average between the background and the bird. Neither is right. You want the exposure right for the *bird*.

Furthermore, even if the auto-exposure *is* exposing for the bird, many birds are multi-coloured. Will auto-exposure expose for the white part of the bird or the black, or for the average? This is something you need to control.

Finally, when shooting birds in flight, you need the fastest possible auto-focus and if the camera is busy trying to set auto-exposure, this will use up valuable CPU cycles in its computer and slow down its auto-focus.

So, use the M Setting in the camera.

(b) Shoot RAW

The reasons are too long to go into in this short article, but you will get better results if you set your camera to shoot RAW instead of JPEG. Since RAW has a greater dynamic range, you can more easily compensate for slightly blown highlights or white balance problems. But RAW files are huge and you will need a large card for your camera as mentioned above. (Also remember to delete all your bad shots from your computer or you will quickly fill your hard drive.)

(c) Camera Focus Settings

Most DSLR's will have a focus setting which allows the focus to follow a moving object. On Canons this is called AI Servo. On Nikon it is called Continuous Servo Auto Focus. With AI Servo or Continuous Focus set, once you focus on the bird by pressing the shutter half-way down, the focus will follow the bird as it move (as long as you can keep the bird within the focus points) until you press the shutter the rest of the way down to take the picture and then release the shutter.

As well, most DSLR's have a setting to set the number of focus points that are used. Typically, by default, the camera is set to use all the focus points and the camera will seek an average focus setting to try to get everything in focus. You don't want this for birds. Again, only the bird needs to be in focus. An alternative choice in the camera is to use only the centre point, but it is extremely difficult to get the centre point onto a moving bird. Use it if that is the only choice, but if your camera has a middle setting with, say, a centre point and the four surrounding points, you will probably find that works best.

(d) Camera Drive Mode

Set the camera drive mode to High-Speed Continuous Shooting. That way when you press and hold the shutter button down, the camera will continue to take pictures as fast as it can and you will be able to record a number of continous shots of the bird in flight. The AI Servo or Continuous Servo mode mentioned above will keep the bird in focus as long as you can keep the bird within the area of the focus points. In a single pass, you will get shots of the bird with wings up, wings level, wings down, good and bad backgrounds, some in focus and some not. With any luck, one or two shots will turn out.

(e) Shutter Speed

Generally speaking, you can hand hold a camera at the reciprocal of the focal length, so you could theoretically hand-hold a 400mm lens at 1/400th of a second. However, this does not account for movement of the subject. With a big slow moving bird, like a goose, swan, great blue heron or egret, you might get away with 1/800th of a second, although if light permits, you will generally want to use 1/1000th of a second or faster. Smaller birds will require even faster shutter speeds. For instance, to stop the wing movement of a humming bird would take a very much higher shutter speed.

(f) Aperture

You only want the bird in focus, and not the background, so you will generally shoot with the lens near wide open unless you are shooting a bird against the sky. Most lenses have a "sweet spot" at which they are sharpest, usually a stop or half a stop above wide open, and that is where you will want to shoot. For an f 5.6 lens, for instance, you may want to shoot at f 6.3 or even f 8 if you have enough light. Increasing the f stop slightly will increase your depth of field and help keep the whole bird in focus, but will also bring the background more in focus, which you don't want. You would very seldom use an f stop greater than f8 for that reason.

(g) ISO setting

Since you are shooting in Manual mode, you need to set the ISO as well as the shutter speed and aperture. Do NOT use Auto-ISO. That defeats the purpose of manual mode as the camera will then attempt auto-exposure by manipulating the ISO setting and for reasons above, you want to manage the exposure manually.

Remember that the lower your ISO setting, the greater the quality of your photos. As you increase your ISO settings, your photos will get grainier (noisier). How high an ISO you can use without too much noise will depend mainly on what camera you are using. For instance, my Canon 7D gets noticeably grainy at anything above 800 ISO, but I can comfortably shoot my newer Canon 6D at 3200 ISO. But lower is better.

The other thing to remember is that you can shoot at higher ISO's if you exposure is dead on. However, if your exposure is slightly off, attempting to change the exposure in post-processing will quickly bring out the grain.

(h) How to Expose

Since most people are used to using auto-exposure, you might wonder how on earth you set the right exposure of a bird exposing manually.

First you have to understand the "exposure triangle". There are three elements that affect exposure - 1. shutter speed, 2. Aperture, 3. ISO. If you are properly exposed and change any one, you must change one of the others to compensate. In effect, you need to do a cost/benefit analysis of each change. Here are the trade-offs:

Shutter Speed: You need a high enough shutter speed to offset camera shake with long lenses and the movement of the bird. However once you have set the shutter speed high enough to "freeze" the bird, there is no advantage to increasing the shutter speed further as increasing the shutter speed with require you to increase the ISO to compensate, which will degrade the quality of your images.

Aperture: A higher f stop will get more of the bird in focus and will give you a bit more room for error in focussing, but will tend to bring the background more in focus, which you don't want. Increasing the f stop will also force you to drop the shutter speed or increase the ISO, neither of which you want. So generally speaking, try to shoot with a low f stop, unless you have a really

bright day and can get away with a higher one without pushing your ISO or shutter speed settings.

ISO: The trade off here is that the higher the ISO, the grainier your shots become, but lowering the ISO forces you either to decrease your shutter speed and risk a blurry picture, or decrease your f stop (which probably is pretty near wide open to begin with). The long and short of it is use the lowest ISO you can get away with such that your shutter speed is fast enough not to blur the bird. Secondly, be aware of how high an ISO your particular camera can use before pictures become unacceptably grainy. (Trial and error will tell you this.)

So, having said all that, how to do you set the right exposure? It is a combination of trial and error and experience. On a sunny day, try starting off with settings of 1/1600th, aperture f 6.5 and ISO 400. Take a couple of practice shots of nearby birds or light coloured scenery (grass or trees, or a clear northern sky), and view the exposure in the camera's LCD. If it is too light, you can afford to reduce the ISO or increase the shutter speed or f stop. If it is too dark, you have to increase the ISO or reduce the shutter speed or f stop.

Most DSLR's have a setting that will show overexposed areas as flashing in your LCD. This is often an optional setting and you may have consult your camera manual to find it. It is important not to blow out the whites on bird so if you are shooting a bird that has white on it, you will want to set the exposure just short of the point where the white parts flash. (Don't worry about flashing of the sky part of the picture -- it is the bird, not the sky you are shooting). If you are shooting a dark coloured bird with no white, you will want to expose more to the right.

After shooting a few birds, check your shots in the LCD and change your exposure if necessary. If the sun goes behind a cloud, change your exposure.

With some practice, you will get a feel for what the proper exposure is for given light conditions

Just be aware that if there is not enough light, you will not be able to get a good picture no matter what you do and it is time to pack up and go home for the day.

(i) How to Pick up the Bird in Your Viewfinder

At first you will find that picking up a moving bird in flight in the viewfinder is not easy. Your first shots will be mostly of the back end of the bird flying away. If you have a zoom lens, you could try locating the bird with the lens zoomed out, then zoom in. There is no replacement for practice however. The more you practice, the better you will get.

A good place to practice is on the eastern shore of Burlington Bay, just north of the lift bridge. You can park in the parking lot of the
Canada Centre for Inland Waters -

https://www.google.com/maps/place/43°18'11.7%22N+79°48'03.5%22W/@43.303258,-79.800975,16z/data=!4m5!3m4!1s0x0:0x0!8m2!3d43.30326!4d-79.80098?hl=en

on Eastport Drive, then walk north along the shore to where you can get a clear view

https://www.google.com/maps/place/43°18'11.7%22N+79°48'03.5%22W/@43.303258,-79.800975,16z/data=!4m5!3m4!1s0x0:0x0!8m2!3d43.30326!4d-79.80098?hl=en

of the two islands just offshore. These islands are full of cormorants and terns which will be constantly flying about giving you ample practice at shooting birds in flight, or you can practice on gulls just about anywhere.

4. Shooting Stationary Birds

The settings for shooting stationary birds are much the same as for birds in flight except:

(a) Set your camera to Spot Focussing. You will need this so that you don't end up focussing on the nearby background instead of the bird.

(b) You can shoot at a much lower shutter speed when shooting a stationary bird, say 1/400th with a 400 mm lens with IS, such as the Canon 100-400, or 1/500th with a 400 without IS, such as the Canon 400 prime, and therefore you can set your ISO lower.

(c) A flash with a better beamer (as mentioned above) can be useful to put a catch-light in the bird's eye and lighten dark areas. Set your flash to high speed sync and your camera flash exposure compensation to anywhere from -1 to -2-1/3 otherwise the resultant shot will look too harsh or "flashy".

(d) A monopod can be useful to steady the camera and allow you to shoot at a lower shutter speed.

(e) Surprisingly, it can still be usefull to shoot several (perhaps three) shots in rapid succession using the high-speed continous shooting setting. The reason is this -- you will probably have some camera shake. Your camera will be moving up and down as you handhold it. But in between, there is an instant when it is changing from moving up to moving down when it is completely still. If you fire off three shots in rapid succession, there is a good chance one will be in the sweet spot when the camera is still and will be sharper than the other two. (Although if you are using a flash, the flash probably won't recycle quickly enough to use this technique.)

(f) Finally, try to position yourself so that you have a clear shot of the bird with no twigs or branches blocking part of the bird, and with as clear a background as you can get. Nothing spoils a good shot of a bird more than a busy foreground or background.

5. Post-Processing

All bird photographs need post-processing (that is, manipulation of the photo in your computer using something like Lightroom, Photoshop, Photoshop Elements, iPhoto or Aperture). But while post-processing can make a good photo great, but can't make a bad photo good.

Here are some suggestions for post-processing.

(a) Raw File Post-processing

Do all your post-processing on the Raw file, then export to a jpeg to publish the image or enter it in a club competition. Don't do any post-processing on the exported jpeg. If you are not satisfied with the result, go back to the raw file, reprocess and re-export.

(b) Cropping

Crop the photo to get rid of distracting items in the background if you can. Try to leave more space in front of the bird than behind, particularly with birds in flight, which need visual room for the bird to "fly into".

Original – shot with a Canon 7D (APC Sensor), Canon 100-400 ER lens at 400mm. 1/1250th, f6.3, ISO 320

Cropped
Not only makes the bird larger, but removes the distracting log behind the bird and distracting shoreline at the top.

(c) Exposure Sliders

In most cases you will probably want to use the Shadows and Highlights sliders to lighten up the parts of the bird in shadow and perhaps darken the sky. Don't overdo it, though as this will increase noise. You may also want to use the "recover" slider if you have one, to restore blown out highlights if there are any. You can also use the general Exposure slider if necessary.

Exposure Sliders
Lightened shadows slightly to lighten under the wing, then darkened highlights slightly

(d) Colour Temperature

The auto white blance in the camera is easily fooled, particularly if you are shooting in the fall with a background of fall colours. Use the colour temperature slider to restore the proper colours to the bird.

Warmed colour temperature slightly

(e) Definition, Vibrancy and Saturation

You might try to boost the the vibrancy or saturation slightly, but don't overdo it or your photo will take on a very artificial look. Some software programs have sliders for things called "definition", "clarity" or "mid-range contrast" that may improve the photo if used very judiciously.

(f) Noise Reduction

If you had to shoot at high ISO and your picture looks grainy, you could try using noise reduction if your software provides that option. (Here this was not necessary as the photo was shot at ISO 320.)

Slight increase to definition and saturation

(g) Sharpening

Sharpening is very important and should be the last step after you have done everything else. Almost all bird photos will benefit by a bit of edge sharpening, but don't overdo it. If your bird suddenly seems to have a white outline around it, it is over sharpened.

As well as generally sharpening the photo, if your software lets you brush in sharpening, try brushing in extra sharpening on the eyes, beak and feet.

Slight overall edge sharpening, plus extra sharpening of beak, eyes and feet

6. Don't be Afraid to Ask Questions...

Don't be afraid to ask questions of more senior club members. You will find them regularly haunting some of the venues above and they love to give advice. Just introduce yourself and tag along with them.

Don't take everything in this Guide as gospel. Everyone does things a bit differently and you will find, for instance, differing advice on the links below. With time you will develop your own style and tricks.

And finally - HAVE FUN!

7. Other Resources

Mike Atkinson Bird Photography Tutorials http://mikeatkinson.net/tutorials.htm

Secrets of Digital Bird Photography http://digitalbirdphotography.com

Cornell Lab of Ornithology (Bird Identification) https://www.allaboutbirds.org/guide/search

WhatBird - Bird Identification Site http://www.whatbird.com

Flickr Bird ID Group https://www.flickr.com/groups/bird_id_group/