



# **Mastering Metering** **7 Simple and Powerful** **Techniques** That I Use to Nail My Exposure in Wildlife Photography (and You Can Totally Do It Too!)

Getting the right exposure is really hard. I've been there. From P (not **P**rofessional) mode to aperture priority to shutter priority to manual, I've tried it all. But I didn't get any satisfactory results until I spent years learning from master photographers—from modeling their techniques at their (expensive but well worth it) workshops, studying their publications, spending days and nights reading hundreds of books, online forums and photography magazines, and doing a lot of trial and error in the field myself.

I've had countless painful experiences that I don't want to remember—but now I'm sharing with you seven simple techniques that I use, which consistently produce the exposures I envisioned.

First of all, what is the correct exposure?

There is actually no right or wrong exposure. The correct exposure is the one you **envisioned in your mind's eye** when you were at a scene. You have **two objectives**. **First** is to use all kinds of in-camera capabilities to record that data, while **maximizing the information (details)** from the RAW file so that the final photo will be ready for publication, gallery display, large-format printing, and online posting. But most importantly, you want to obtain the best quality that not only satisfies you, but also moves and inspires other people. **Second**, you want to have the **quickest and easiest** way to meter your shot, so that you can forget about the exposure concern, and focus on your creativity, composition, self-expression and capturing the decisive moment when you are in the field.

If you are like me, you have spent thousands of dollars (or much more, oops) on cameras and lenses. These cameras and lenses (assuming they are digital) have technology way beyond anything from just a few years back. (I still remember I spent \$3,000 for the first Canon D30 [not 30D!], and \$400 for a 1GB Microdrive.)

The new technology has enabled us to take photos with quality previously unmatched. But we need to learn how to optimize our technique to get the best quality image file from our cameras. Metering and exposure are critical in this process.

So what have I learned about metering and exposure?

(BTW, all these methods are not invented by me. They are from the great minds of professional photographers, good friends, and online forums. I merely picked those that worked for me and am now sharing them with you here. So a big thanks to everyone who have helped me along the way! Thanks to Steve Uffman, Melissa Groo, Loi Nguyen, and Donald Quintana for discussing with me individually on metering prior to the webinar, and Trent Sizemore for recommending me and giving me tips on how to do a webinar.)

## 1. Pre-Trip Setting for a Sunny Day

How many times have you missed an opportunity because you haven't set up the camera when you came upon an animal unexpected? It's critical that we do a preliminary setup so the camera is ready to fire (without catastrophic exposure errors) in the case of unexpected encounters. But before we get to that point, we should always change two settings in our camera bodies.

- One is to enable Highlight Alert so that we can see "blinkies" (part of the image blinking) on the final image on the LCD if the image is over-exposed, with certain areas completely white (losing details that are not recoverable). One thing to bear in mind is that the image you see on the LCD is a JPEG conversion of the RAW file (which you should always use). That means sometimes some over-exposed blinkies on the JPEG display can be recovered with the higher bit rate of RAW files. But still, try to avoid having blinkies.
- The second setting to check is that the Histogram display should on, with RGB (a must). You need to always check the red-green-blue histogram to make sure no pixel is saturated (meaning being cut off at 255).

Also, always check the weather report for your destination. Check sunrise and sunset time, weather and wind. Then, plan accordingly. Generally, these are the criteria I consider: sunny, cloudy (overcast), and windy (sometimes certain birds don't go hunting when it's windy, plus wind direction helps you determine the takeoff or landing direction for certain species, such as Sandhill cranes).

If it is a sunny day, you can follow the Sunny 16 rule. If my objective for the trip is birds-in-flight, I usually set my camera metering mode to manual, and set the camera to  $f/7.1$ ,  $1/2000s$ , ISO 400. That should be the pre-trip camera setting. For overcast days, it's trickier. I will talk about that later.

## 2. Manual Exposure (Best for Birds in Flight on a Sunny Day)

Most people I talked to seem to use spot metering on the subject, and they allow the camera to make its own judgment. But a lot of exposure compensation is needed if the bird is white or black (or both). And you never know how big the spot is for “spot metering.” So it’s not a reliable method.

To have a more reliable method, you have to communicate with your camera better, meaning you have to manually tell the camera what it is looking at (i.e., point the focus point of the camera to a spot that is 18% grey, also known as mid-tone). You tell the camera this spot is mid-tone by adjusting the shutter speed, aperture, or ISO so that the light meter points to zero.

For sunny days, if you are photographing birds in flight, the best method would be to:

- Have the sun exactly behind you.
- Look at your shadow.
- Check where your shadow is pointing. That’s where you will be photographing the bird or wildlife. Always move your feet according to this line of sun vs. wildlife. Three to five degrees off could create a tiny bit of shadow to make the image more 3D, but that also depends on the time of the day. Keep experimenting.
- Set your camera to **spot metering and manual(M) mode**. Look at that area and spot meter on anything that has consistent mid-tone, such as grass or a tree trunk.
- You have to practice seeing things in greyscale, and be able to tell which part is mid-tone.
- Aim the focus point to that area and half press the shutter to get a reading of the light meter.
- If the light meter inside your viewfinder gives you a negative reading, then decrease shutter speed, reduce f-stop, or increase ISO until the light meter points to zero.
- When in doubt, take a pic and review it in LCD, then see how the histogram looks and make sure there are no blinkies (again, make sure to turn on highlight alert.)

The benefit of this method is that since the sun is behind us, the light illuminated on the field in front of us should be very consistent. Thus, the exposure of any part of the scene in that direction should be the same. This takes care of two problems:

- It does not depend on the luminosity (brightness) or color of the bird or wildlife.
- It does not depend on the luminosity or color of the background.

This is particularly useful for tracking birds in flight when the bird is illuminated by the light but the background brightness keeps changing. This way, the exposure on the bird is always correct.

If you use spot metering on the bird, sometimes you may spot on the eye of the bird, while other times on the wing. Then the exposure will be changed, which is wrong.

Someone asked me how I deal with birds flying in and out of bright and shadowy areas. That's a tough question. Spot metering on the bird would not work because if you are not able to keep the focus point right on the desired region of the bird, then your exposure will change rapidly during the AF tracking. You never know how big the spot is for spot metering. It may be based on a small part of the bird, or it may include the surroundings. Evaluative metering also doesn't work because it depends largely on the background with birds in flight, as that varies a lot during flying. One way to deal with this is to spot meter mid-tone regions in both the bright region and the shadow region, and remember how many stops of light are in the difference. Then, when the bird flies from the bright to the shadow region, you manually adjust the difference in stops. But it is very difficult to adjust all these factors in real time. My advice is that if the light is beautiful, the shot when the bird is in the shadow will not be extremely good. In that case, I will just give up those shots and enjoy the moment in nature. But if you really want to get the shot, then please read section 6.

### 3. Snow

What if there is no mid-tone region, such as when everywhere is covered with snow? Remember, manual mode and spot metering is all about helping the camera map a reference point. It does not necessarily mean a mid-tone. Here, we can set to **manual mode and spot meter** at a region of white snow, then adjust shutter speed, aperture, and ISO so that the light meter reads +2 1/3. We are basically telling the camera that what it is looking at is white. Then the camera is good to go.

Special thanks to Charles Glatzer, Canon Explorer of the Light, for his wisdom on this.

### 4. Pre-Trip Setting for Snow Environment

One thing to bear in mind is to keep checking the reading off the snow so that you are ready at all times. Before your trip, you should set your camera to **Manual (M) mode and spot metering**. For example, when you are in a snow coach or your own car and you suddenly see wildlife nearby, the first step when you open the car window or when you slowly get out of the car should be to immediately spot meter on snow to adjust your settings. This way, you don't need to fumble with the settings when you get closer to the animal.

### 5. Overcast Conditions, or Wildlife in and out of Bright and Shadowy Areas

I use **evaluative (matrix for Nikon users) metering** (note: **not** spot metering here), **manual mode (M)** with **auto ISO + 1/3 exposure compensation** (see section 8) and it works for me most of the time! (thanks to my good friend Roy Dunn who told me that exposure compensation on auto ISO is finally available on some Canon models and helped me set that up.) It's rare, but you have to pay attention when all of a sudden the sun shines through the cloud and the animal (that's white or has white highlights) gets into an area with a dark

background. Then you have to dial down 2/3 to 1 stop. For those of you whose cameras don't have exposure compensation when using manual and auto ISO, you are "stuck" with aperture priority or shutter priority. They are ok as long as you know their limitations. For aperture priority, if the light suddenly drops two stops, your shutter speed may get so low that you cannot freeze the motion. For shutter priority, the photo will be underexposed if the f-number cannot get lower when the light suddenly drops. Some people may use auto ISO with an upper limit for shutter priority, but I don't know how you can control the f-stop in this case. And sometimes you could have a lower ISO and a lower f-number but still not be able to control it.

## 6. Pre-Trip Setting for Overcast Conditions, or Wildlife in and out of Bright and Shadowy Areas

This is easy. Just choose **evaluative/matrix metering, manual mode**, auto ISO + 1/3 exposure compensation before the trip and you are good to go.

## 7. Expose to the Right

A lot of the time we want to open up the shadows of the dark areas to see more details. But this usually ends up inducing a lot of noise in those areas. To remedy this, we can intentionally over-expose our photos (without causing blinkies), so that the dark region will be brighter and can capture more details. Meanwhile, the bright region will be brighter (but not cut off at 255). This way, all we need is to slide the highlight bar to the left to darken the highlight of the image, while retaining the details of the dark region. That's why we added 1/3 or 2/3 exposure compensation in section 6. Along the same lines, we can also add 1/3 stop in section 3 after spot metering at the mid-tone. However, it is not advised to add more stop to snow scenes in section 4.

**NOTE:** All your photos will appear over-exposed but that's exactly what it is trying to do: to maximize the acquisition of details in the shadow/darker area of an image without inducing noise, while push the histogram all the way to the right without any clipping of highlight. So review your photos with RGB histograms in the camera LCD and check your blinkies consistently. You may say, "that's a lot of work!" Well, who said getting the ultimate image quality is easy? After you download your photos in your computer and open them in Lightroom, you can go to Develop mode and easily slide the "highlight" bar to the left to darken the area of the image that's over-exposed. This way, the shadow/darker area will not be darkened, and all the details (that you paid thousands of dollars for your camera) will be there. And sit tight, as you may fall off your chair seeing the quality.

For more info on metering and exposure: Charles Glatzer, Canon Explorer of Light, has a wonderful workshop called the "technical series workshop". This particular workshop is about \$1,500 and my friends who attended said it's well worth it. Go check that out at [www.shootthelight.com](http://www.shootthelight.com). You can check out Arthur Morris's digital basics at his Birdsasart homepage (about \$50).

## So to Summarize:

Remember, **story = mood + emotion**, as mentioned in Robert McKee's book *Story*. Our goal is to get the most detail/information from our RAW captures through one-shot exposure, so that we can realize what our mind's eyes see at the scene. So here are some tips when you prepare for a trip:

- Check the weather channel for sunrise and sunset time, and sunny or overcast conditions. Also, look at the map to see where the wildlife will be relative to the sun so you can find a spot where the sun is behind you. (If you want to learn more about backlit photography, please sign up for my newsletter for future webinars and blogpost on this topic.)
- Make sure you have activated **RGB histogram display** and **highlight alert (blinkies)** in your camera.
- If it is sunny, set your camera to **manual (M) mode and spot metering**. Then remember the Sunny 16 rule and adjust your camera first (for birds-in-flight, I usually start with f/7.1, 1/2000s, ISO 400.) Then, look for your shadow. Set manual (M) exposure and spot meter the mid-tone where your shadow is pointing. I usually intentionally set the light meter to **+1/3** to over expose by 1/3 stop (sometimes even 2/3 stop if you dare to live dangerously) instead of setting the light meter to 0 (expose to the right.) But make sure to take some test shots to check for blinkies. Also keep checking the light by spot metering the mid-tone from time to time in case the light drops near sunset or the light gets stronger when it is near sunrise. Then adjust your shutter speed, aperture, and ISO accordingly.
- If it is overcast, or if the wildlife is moving in and out of shadow, then use **evaluative(matrix) metering, manual (M) mode, auto ISO + 1/3ev**. If your camera doesn't allow exposure compensation while using M mode and auto ISO, then choose between aperture priority (Av) or shutter priority (Tv). If you choose Av mode, beware of sudden light drop which makes the shutter speed too slow (remember my bobcat jumping story). If you choose Tv mode, beware of underexposure when light drops. Sometimes we get carry away by the wildlife we are looking at through the viewfinder and forget to check the shutter speed or the light meter reading in the viewfinder.
- Beware when the light breaks through the clouds or if the wildlife (that has any white color) moves in front of a black background. In that case, immediately change your shutter speed, aperture or ISO to drop the exposure by one stop.

So, we nailed it. You are all clear by now, right? No? Still confused? Ok, here is a table just for you.

Weather condition	Pre-trip setting	In-the-field setting	Beware
Sunny	Sunny 16 Rule!	<ol style="list-style-type: none"> <li>1. M mode (start from f/7.1, 1/2000s, ISO 400)</li> <li>2. Spot Metering,</li> <li>3. look at where your shadow is pointing at,</li> <li>4. find mid-tone and half press focus to get light meter reading in your viewfinder,</li> <li>5. adjust Aperture, shutter speed, ISO until light meter is at +1/3 stop</li> </ol> <p><b>Note:</b> This is the most accurate exposure method, regardless of the luminosity (brightness) of the subject or the background. Disadvantage is you have to spot meter on mid tone from time to time (every 15-30 mins) to re-adjust.</p>	Every 15 mins or so, check mid-tone again, especially near sunrise and sunset For bird/wildlife that has any white color, light meter set to 0 instead of +1/3 for safety
Snow	Same as in-the-field setting	<ol style="list-style-type: none"> <li>1. M mode,</li> <li>2. Spot Metering,</li> <li>3. find the "whitest" patch of snow,</li> <li>4. adjust Aperture, shutter speed, ISO until light meter is + (2 and 1/3) stop</li> </ol>	Every 15 mins or so, spot meter on snow again to see if light increased or decreased
Overcast, predawn, after sunset, wildlife/bird in and out of shadow, or even rainy day	Same as in-the-field setting	<ol style="list-style-type: none"> <li>1. M mode and <b>auto ISO</b> (I usually start with f/5.6, 1/1600s) to begin.</li> <li>2. Evaluative/Matrix Metering</li> <li>3. Adjust exposure compensation to +1/3 stop (or +2/3 if danger is your middle name)</li> </ol> <p><b>Note:</b> This is the fastest setup for unexpected action when you are totally not ready. Set your camera with a higher shutter speed such as 1/1600s prior to the trip. Usually unexpected action is super-fast, and super-awesome. Nailing those shots should be your top priority.</p>	If sunlight suddenly bursts through the cloud and the bird/wildlife gets to a dark background, immediately adjust exposure compensation to -2/3 or -1 stop Check your blinkies if you dare to use +2/3. Every brand of cameras varies.



That's it for now. It's that simple. I'll be back soon with more great stuff! Make sure to check my homepage from time to time, and tell your friends to sign up for my newsletter at <https://tinmanphotoblog.com/newsletter> to get updates on upcoming webinars (!) and more goodies. Shoot me an email at [tinman@tinmanlee.com](mailto:tinman@tinmanlee.com) to say hi if you enjoy this.



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<https://tinmanphotoblog.com>

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(Gentoo penguins and me after sunset at the Falkland Islands, 2016. Taken by my Dad. Guess what metering mode I was using?)