Accurate Focus in Snowstorms

www.gerlachnaturephoto.com

Figure 1-I used #4 to achieve sharp focus on this big bull moose in heavy snowfall. Exposure is easy, using manual exposure, I adjust my live in the viewfinder histogram to make the rightmost data touch the right wall of the histogram. I shoot a shot, play it back, and look for blinkies. If no blinkies, I add 1/3 stop more and repeat the sequence. If the first blinkies appear, then I add another 1/3 stop and go with that to get less noise and more detail in the dark fur of the moose.

Snow falling on and in front of the subject adds a wonderful mood to winter photos. Falling snow is easily seen by the autofocus mechanism in your camera when the background is dark. This could be a group of dark pine trees, an old barn, or the fur on a moose or feathers of a black raven. Though snowy images are magical to view and easy to expose, they are not easy to sharply focus. First, much of the scene is soft due to the motion of falling snow. Second, much of the detail is hidden behind the falling snow and therefore the sharp details in the hidden area are not present in the image. Third, autofocus usually fails to hit sharp focus on the subject when snow is falling. Autofocus is so good today that usually the falling snow immediately in front of the subject is focused on, and not the subject which remains a little or a lot out of focus. (I wonder if it is possible for the camera makers to be able to provide a setting where the camera only autofocuses on dark objects and leaves the white snow alone?)

Having led more than 150 photo workshops in Yellowstone and the Grand Tetons over many years, I frequently photograph during snowy winter days. I recognized this autofocus problem years ago and struggled with it, but now there are better tools for achieving sharp focus. Let us look at the possibilities for achieving sharp focus, and some new ones offered by my mirrorless Canon R5.

1. Focus manually in a snowstorm

Since I know autofocus typically focuses on falling snowflakes slightly in front of the primary subject, I turn autofocus off and focused manually in the normal manner. For me, this works better than autofocus, but my old eyes do not see like they once did and usually I miss focus a little or a lot. I do get some sharp images, but most of the time I miss sharp focus when I rely on manual focus, especially when falling snow is obscuring the subject. For me, manual focusing the subject in the falling snow is pointless if I want sharp images unless I use camera focus aids. But, if you can focus manually with great accuracy, then more power to you. Be aware that I have seen many client images in snow where they think they are achieving sharp focus and they are not. Many attribute a slightly unsharp subject as a result of snow being in the way, rather that realizing the subject is not in sharp focus to begin with. I just found out I need cataracts surgery, so maybe my manual focus abilities will improve once I have the operation!!!!

2. Use Focus Peaking

My mirrorless Canon R5 offers focus peaking. It is found under AF and menu 2. I can turn it off or on. When turned on, I can set it to High or Low and also to red, yellow, or blue. If I set it to red, when I manually focus the lens, those areas in focus appear red. To see the color better, there is a High or Low setting. I use High and Red during winter to help me see the areas that are hopefully in focus. Should it be fall color where I have lots of red subjects, then I would use blue and high. Focus peaking seems like a wonderful way to precisely achieve sharp focus and I tried it for many subjects. However, my results were not as sharp as I hoped for. The area that lights up when using focus peaking is clearly not all the same distance from me. Since only one plane is sharply focused, having focus peaking show me that areas that are a little in front of or behind the main subject are sharp is not helpful and therefore I no longer use focus peaking. I will try focus peaking again, though, and perhaps I will get better results. If it works for you, then that is a worthwhile way to go.

Figure 2 Trying a variety of focus methods, I used my old reliable way of getting sharp focus with #3. After testing all of these methods, #3 is remains my favorite for still subjects.

3. Start with autofocus to get close, turn it off, move the AF point to coincide with the face of the subject, and magnify the subject to help you focus manually

Another way to achieve sharp focus that has worked well for me over the years is to use autofocus to get the subject somewhat in focus. Then I turn off autofocus by pushing a switch on my Canon lens, move the AF point over to the face of the subject, press the magnify button to enlarge my subject in the electronic viewfinder, and manually focus on any subject detail I see. Usually, the detail is the hair on the snout of my subject or the eye. This works quite well, especially with a

mirrorless camera as opposed to a DSLR. Since a DSLR has a true optical viewfinder, pressing the magnifying button does not magnify the view of the subject in the camera's viewfinder, but it does magnify the LCD on the back of the camera So you must look at the magnified LCD and manually focus the lens. This works but using the viewfinder is better. The LCD is more difficult to see well in bright ambient light and snowflakes or water drops make the LCD even more difficult to see well. However, with my DSLRs, this method is exactly what I used with surprisingly good results. Now that I only shoot mirrorless cameras where the LCD and the view in the electronic viewfinder are the same, this is the method I use to hit sharp focus in snowstorms most of the time.

The difference between #1 and this option is now the face of the subject is magnified so I can tell more accurately when I am in sharp focus while using manual focus.

4. Use a special tool in the camera (such as the one found in my Canon R5)

Lens Electronic Manual Focus is found under AF and menu #4. Four options are offered.

- Disable after One-Shot
- One Shot-enabled
- One Shot-enabled (magnify)
- Disable in AF Mode

I tried this method during my early December Grand Tetons workshops, and it worked, but……. First, this method only works if the camera is set to One-shot autofocus and not continuous focus or servo. Already that is a problem because when photographing wildlife, you want the camera to change the focus automatically as the distance between you and the subject changes, either closer or further away. But, normally during snowstorms wildlife do not move much, and if they do, they move slowly, and this is fine with one-shot focus, and you will not likely use autofocus much in a snowstorm anyway. The problem is you may (I know I do.) forget to set the camera back to servo when snow is no longer a focus problem.

Option #1, Disable after One-Shot, lets you have autofocus set to one-shot, but if you press the shutter button down halfway, you can turn the manual focus ring to touch up the focus. When sharp focus is achieved, press the shutter button all the way down to shoot the image. After you shoot one image, this mode is disabled. I never want to shoot only one image, so this is not an option for me.

Option #2, One Shot-enabled, allows you to do the same as the first option but it does not become disabled after one shot. This is promising but I prefer the next option where the spot where the AF point is located is automatically magnified.

Option #3, One Shot-enabled (magnify), works best for me. With the camera set to one-shot autofocus and NOT SERVO, hold down the shutter button half-way and turn the manual focus ring a little and that instantly magnifies the area where the active AF point is (the face of the moose in my case), and then I manually touch up the focus on the hairs on the nose or around the eye and shoot the sharply focused image by pushing the shutter button all the way down. This works quite well. Just remember the autofocus is set to one-shot focus and not continuous focus. One-shot autofocus works well for still subjects but continuous focus is best for subjects that move and change the distance between them and the camera.

The fourth option, Disable in AF Mode, simple disables this menu item so you do not accidently change the focus distance with the manual focus ring when using one-shot autofocus. If you primarily only use autofocus, then this is a safe option to set. Keep in mind this menu option does not work when the camera autofocus is set to SERVO.

This worked well when I tested it on a large bull moose resting in heavy snowfall in the Grand Tetons. But there is always the danger the skies might open up and the snow stops falling and then you want to track an animal walking toward you, perhaps a red fox, coyote, or badger. In that case, one-shot AF is a poor choice as you need Servo, so the camera changes focus automatically as the subject distance changes. It is easy to forget you are still in one-shot AF with this method. Plus, when you half press the shutter button, and then manually focus the subject, you must then not let up on the shutter button. If you are waiting for the subject to assume a pleasing pose, that could be a long wait. And I find my fingers must be uncovered when manually turning the focus ring while also half pressing the shutter button, and cold fingers make it difficult to do all of this. I did find it worked well, but not on truly frigid days.

5. **Use Focus Bracketing to hit sharp focus.**

Most of the latest camera models offer some form of automatic focus bracketing or focus stacking. Though the name might be different among camera brands, this in-camera tool performs the same function. For example, with the Canon R5 camera I use, activating the focus bracketing tool lets the camera change the focus slightly to a greater distance automatically when the camera is set to autofocus. There are a couple of options associated with Focus bracketing that are important. There are ten increment levels, and you can set how many shots should be included in the stack. Increment level 1 is the smallest and then the increments increase up to 10. The increment level determines how much the focus changes from shot to shot. Increment 1 is a tiny change and is most suitable for use in macro photography whereas increment level 10 is a substantial change. Normally I use increment level 2, but most likely I am overdoing it, and the default of 4 would be fine. As I write this on Dec. 19, 2021, I have reset my camera from increment 2 to increment 4 and ran tests using that. I have my camera set to 30 shots maximum. This does not mean every focus bracketing stack I shoot is 30 images. The camera stops shooting the stack when it reaches 30 images or the autofocus reaches the end of the focus range and that is far more likely than reaching 30 images, especially for big subjects like a deer, moose, or bison in a snowstorm.

Figure 3 This is the first time I tried the auto focus bracketing offered by my Canon R5 to capture a single sharp image of the subject - it worked. Now will it work for animals in motion?

Many say the camera stops shooting when infinity focus is reached. My experience shows that is not true. Every zoom lens I have tried is made to focus past infinity. That means the last photo or two or three is out of focus because the lens has focused past infinity. It is not a problem, though, just delete the last out of focus images from the stack.

If we are only concerned about getting a sharply focused image in a snowstorm, use the focus bracketing tool and shoot a stacked set. The purpose is to get one perfectly focused image of the subject amid the swirling snow. To find that one, magnify the first image in the stack and then scroll through the stack until you find the most sharply focused image. This works because the camera automatically focuses on snowflakes in the foreground, and after the first shot in the stack, the camera no longer "looks for a focus target" but changes the focus a little further away and shoots the image and keeps doing that until either the maximum number of images is reached, or the focus cannot move any further. In other words, once the stack begins, falling snow does not influence where the focus is set. Hopefully, during the multiple images shot that make up the stack, at least one image is in perfect focus on the subject.

As I write this on Dec 20, 2021, I need to run more tests when using this method. I had some luck with it in the Tetons recently, but many questions remain. Does it matter how dense the falling snow is? What increment amount works best in the snow? How many images need to be shot to ensure the subject is

covered with precise focus? Given that the electronic shutter is used when auto focus bracketing is used with the R5, and that is fast, is it fast enough for walking animals in snowstorms? How about running animals? I need to run some tests and the weather forecast is calling for 15 inches of snow in one day. I can set up in my garage to minimize wind blowing on my gear and to keep snow off too and put a test target about 30 yards outside in the snow and see what happens using different auto bracketing parameters. I will report my results once I have results to share.

I just ran my test on Dec 23, and these are my results. Now remember this was only a limited test and I need to use it during my upcoming Yellowstone Photo Tours. Hopefully, I will get some bison in heavy snowfall. In each of my tests where I use two tree trunks at different distances when the snow was falling, I found using increment 2 and a maximum number of images set to six worked fine. Although I sometimes had to try to get the camera to autofocus more than once to focus on the tree trunk somewhat, I found the best focus on usually image 2 or 3, and in once case it was a toss-up between #3 and #4. Never did the best focused image extend past 4, so that is the reason I set the maximum image number to 6 and I found using increment 2 worked well to achieve at least one image that is precisely focused on the animal's face. These results may change over time as I get the chance to do more real photography in the field during snowstorms. Be aware that at time the camera did not focus anywhere near the subject as it has found falling snow close to me, so I kept trying to make the camera focus on the animal and after a few tries, the focus improved but was never perfect in falling snow.

6. Use Eye Focus

If your camera offers eye focus, that works tremendously well for animals amid falling snow whenever the eye focus successfully "sees" the eye. For most birds and animals that have an eye that is distinct from the surrounding fur or feathers, eye focus works quite well. But, in some cases, eye focus cannot find the eye and then you are better off to use one of the other methods to achieve sharp focus in snowfall. For example, the eye focus on my Canon R5 is seldom able to detect the eye of a moose or bison, especially in falling snow, since the eye and fur surrounding the eye are both dark and tend to blend into each other. With so little contrast between the two, the eye is not detected.

Last thoughts. For still objects in snow, I think I will go with what I have been using for years, that is, to set the lens to manual focus, move the single AF point over to coincide with the face of the subject, magnify the animal's face, and manually focus on any animal details I can see. For moving animals, I am hoping auto focus bracketing will get me a sharp image. Remember, I do not plan to stack the subject with multiple images, but I do plan to shoot multiple images quickly using auto focus bracketing to get one image sharply focused on the subject. We shall see how this all works out with my tests at my Idaho home and during the three weeklong Yellowstone photo tours I am leading with Dixie Calderone.