

IMPROVE YOUR WILDLIFE PHOTOGRAPHY

By Jim Harmer

SMASHWORDS EDITION

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Improve Your Wildlife Photography

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Chapter Zero: A Brief Introduction

Dear Reader,

This book is targeted to beginning and intermediate wildlife photographers who want to increase the drama and beauty of their wildlife images. While some of the chapters in this book touch on subjects such as gear and camera settings, the main thrust of this book is technique.

Wildlife photography is beautiful because it often places me in locations that only God has touched—no telephone poles, no cars, no laptops, and definitely no Twitter. As you capture the lives of animals at the speed of 1/1000th of a second, remember the Creator of the beautiful animals you record.

Regards,

Jim Harmer



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Chapter One: How to Increase the Drama in Your Wildlife Photography

Almost universally, photographers make the same mistake in their wildlife photography. The mistake is taking wildlife photos the same as one would take a portrait of a person. The result of this error is what I call the “cheap studio effect.” I call it that because of the dull and boring wallet-sized images every time I go to a department-store studio and get photographed on cheesy blue backgrounds.

In wildlife photography, the cheap studio effect can be seen where a photographer takes a boring headshot of an animal without including any of the background. While this type of shot may look fine on an advertisement for a zoo, it does not impact the viewer of the photograph. For a wildlife photo to stand out from the crowd, it must reach out and grab the viewer by the eyeballs and demand attention to the drama in the photograph. The following sub-topics will help you to advance your

Make the eye stand out

One key to any successful wildlife photo is the animal's eye. Without exception, the eye must be in perfect focus. The most compelling eyes usually have catch-lights in them. Catch-lights are the bright spots of light that appear on shiny objects when illuminated. Some refer to the effect of catch-lights on an animal's eye as specular highlights.

So you agree that the eyes are important, but why do photographers go to such great lengths to get specular highlights in the animal's eyes? The answer is that photos are 2d and animals are 3d. Photographers must do all they can to give objects depth and the feeling of shape, and the specular highlight does exactly that. When viewing a flat object like a photo, our brains take in visual cues that may convey that the object is actually three dimensional. Specular highlights provide a strong visual cue for the shape of an object and its location relative to light source.

Specular highlights often appear naturally when the ambient light in a scene hits the eyes of an animal, but often the animal will be positioned with its back to the light source. To achieve catch-lights in an animal not facing the light source (generally the sun), the answer is flash photography. Flash photography will be discussed in a later chapter.

Aside from this technical consideration, consider the position of the animal. Many animal shots look great when the animal is looking away from the camera; however, capturing an image of an animal as both eyes stare squarely into the lens will undoubtedly grab the attention of the viewer.

To apply this principle of the two-eyed stare down to increase the drama of a photo, shoot the animal for a while and get as many photos as you want. When you feel like you've captured the animal in its natural habitat, make the animal aware of your presence. Stand up from your hiding place, wave your arms, etc. When a photographer does this, most species will not immediately sprint away. Most animals respond to this sudden stimulus by quickly staring directly at the motion for a minute before running or flying away. By doing this, you get the environmental portraits of the animal and then a second look at the animal in a more dramatic pose. Use care when applying this technique to not disturb the animal nor put yourself in danger if approaching a dangerous animal.



Get down into the dramatic animal world

Nothing screams “zoo photography” like wildlife photography taken from standing height looking down on an animal on the ground. There is no drama in this angle because it is the angle that we are used to seeing wildlife from.

Portrait photographers understand shooting angles better than any other type of photographer. Portrait photographers commonly get low to the ground and shoot up toward a subject in order to give them power and make them seem large. For example, if shooting a CEO in front of the large corporate office, any portrait photographer with have a brain would instinctively get on the ground and shoot up toward the CEO to give him power. Conversely, shooting down on a subject makes it seem small, feminine, and dainty. Taking this lesson from portrait photographers, you’ll do well to consider whether you want to give the animal power by getting low to the ground, or taking away power from the animal by shooting from above it. In most

situations, wildlife photography will look best when shooting from a low angle toward the wildlife.

The importance of shooting from a low angle is lessened as the subject-to-lens distance narrows. For example, if shooting from only a few feet away from an egret, the low angle will be apparent in the photo. If shooting the same egret from 100 feet away, the importance of the angle is lessened.

Incorporating the drama produced by Mother Nature

Images of animals increase in drama when the surroundings of the animal are considered. A photo of a desert with a deep black storm approaching in the distance is far more dramatic and impactful than the same scene on a sunny day. Use the drama in the background to highlight the dramatic surroundings of the wildlife you photograph. While many photographers tend to stay home on rainy, snowy, or otherwise unpleasant days, the experienced wildlife photographer will seize the opportunity and capture beautiful dramatic images of wildlife in the elements.

When unpleasant weather conditions approach, wildlife will seek shelter immediately. Finding the animals during these conditions can be difficult, but the rewards can be great. The key to finding wildlife of any kind during inclement weather is to search for the nesting areas.



Break the rules of composition to maximize drama

One of the first photographic rules that any photographer learns is the rule of thirds and other similar compositional principles. To increase the drama in your wildlife photography, consider another lesson from portrait photographers in regard to violating the rule of thirds.

Portrait photographers not only use angle to give power or take power away from a subject. They also use framing for this purpose. A subject has less power on the intersection of a third line than if the same subject is placed in the middle of a frame.

While 95% of all wildlife photos should use the rule of thirds to produce optimal composition, some of the most dramatic wildlife photos will place the animal directly in the middle of the frame with the animal's eyes on the top-third of the image. This type of composition will create dramatic power when the eyes of the animal are fixed on the lens. If the animal looks off to the side rather than directly at the lens, the impact of this pose is destroyed.

The reason that this technique works is to place the viewer in direct opposition to the wildlife. A gorilla placed nicely on the side of a photo will look beautiful and captivating, but the same gorilla sitting directly in the middle of the frame and staring down the lens will certainly produce a dramatic and powerful image.

The most important key to dramatic wildlife photography

Transform the viewer of your images into a different time and place. Put her in the path of the animals you face and consider the animal world from the perspective of the animals. Where people see a gopher popping out of a hole, the gopher sees fear of hawks and a desperate struggle to find food. The key to dramatic wildlife photography is to consider what threatens the animal you photograph and then to tell that story in just one frame.

All animals—even lions, bears, eagles, and whales—are threatened by other animals, humans, the environment, disease, and starvation. How can a photographer tell these stories of survival? Consider this question every time you shoot an animal: what is this animal afraid of and how can I show it?

Rather than photographing an eagle sitting on its nest, shoot the same bird feeding worms to its young. Rather than shooting a frog in the pond, photograph that same frog leaping up to catch a fly. Rather than photographing a deer sleeping under a tree, shoot the same deer staring down the lens—aware of every sound and sight in the forest. There are countless ways to apply this principle if some thought is given before shooting.



Quick and random wildlife photography tip!

It is uncomfortable to kneel or lay on the ground in order to get a good angle on animals. To encourage yourself to get down low, but a pair of thin Styrofoam kneepads from a home improvement store and wear them under your long pants.

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Chapter Two: Wildlife photos can't be tack sharp—they must be pin sharp

When shooting portraits of people, a little bit of blurriness on the skin is usually preferred. Most people don't like to see tiny imperfections and roughness on human skin in a photo; however, most wildlife photos demand that the entire animal be in perfect focus and pin sharp.

Sharpness is a term that photographers throw around without a second thought. Generally, sharpness is discussed in relation to lens selection because it is the lens that determines what the camera is capable of recording in perfect conditions. However, nothing will reduce the sharpness of an image more than poor lens technique. Let's understand proper technique and then dissect the nitty gritty scientific stuff about the lens itself.

Proper long-lens technique for wildlife photography

If you've ever shot a rifle, you already know that it's tougher to keep the gun steady when shooting a target 200 yards away than it is to keep the gun steady enough to hit a target 2 yards away. Obviously, the reason is that any breathing, flinching, or trembling of the hands will be magnified by a long-range shot. While this may seem obvious, photographers often discount this principle. The longer the focal length, the more important the lens technique. Any movement, no matter how slight, will reduce the sharpness of the resulting image. Not only is wildlife photography especially susceptible to blurry images because of the traditionally long focal lengths used, but also because most animals have fur and feathers which are an area where a photo which is slightly blurry will be noticed by even an untrained eye.

Proper long lens technique starts from the ground up. When at all possible, use a tripod. No, your \$80 tripod from the camera store won't cut it. Not long ago, I was shooting Florida birds on an island off the coast of Southwest Florida when I engaged a "professional" wildlife photographer in conversation. He had the most expensive 600mm lens and high-end camera that money could buy, but he shot handheld or on his cheap \$80 tripod most of the morning. This situation is unfortunate. This photographer had spent thousands of dollars on equipment to take sharp photos, but had gone cheap on a tripod and it undoubtedly impacted his imagery. No matter the effectiveness of your lens at resolving fine details in an image, if the camera is vibrating even slightly during the exposure, the fine details will be blurred. This may seem minimal, but when tiny vibrations in the camera occur while a photo is being taken of a delicate white bird, the feathers will not show their full detail and the image will not capture the beautiful detail of the animal.

Wildlife photography often involves shooting from a vehicle. The vibrations of the car in combination with the long lens are a recipe for blurry photos. To improve these odds, use a large bean bag under your camera for support. The trouble with shooting from vehicles is that the images are more blurry when the vehicle is turned on, but as soon as the vehicle comes to a stop, the wildlife often get scared and flee.

When considering a telephoto lens for wildlife photography, most photographers are attracted to teleconverters. On paper, teleconverters are the miracle drug. A teleconverter is a small extension that inserts between the camera and the lens which multiplies the total focal length by

as much as 200%. Even better news is that they are cheap. Even a high-end teleconverter will not cost more than \$350. Unfortunately, teleconverters rob the photographer of one or two stops of light (depending on the amount of magnification), and they always reduce the sharpness of the resulting image. To improve the success of teleconverters, buy the same brand teleconverter as the lens. Also, any imperfection in the lens will be made worse by a teleconverter, so keep in mind that they work best on the higher-end glass. Proper use of a teleconverter is an important aspect of proper long lens technique.

When purchasing lenses for wildlife photography, most photographers choose zoom lenses rather than prime lenses (prime lenses have a fixed focal length that cannot be zoomed). There are compelling reasons to choose a zoom lens for wildlife photography. For example, the photographer is unlikely to be in a position to freely approach an animal as close as she cares, so being able to zoom with a lens rather than the altering the photographer's position is paramount. However, zoom lenses are generally less sharp than prime lenses and focus slower. I personally prefer prime lenses for wildlife photography because they provide superior sharpness. When shooting prime, I let the distance between me and the animal dictate what type of shot I will make. If I can't get very tight framing, I shoot include the landscape to make an environmental wildlife shot. If I am close enough to get a tight shot, I capture detail on the animal such as the eye or face. This comes down to a decision each photographer must make: Are you shooting to capture as many sort-of-sharp images as I can, or am I looking for a few shockingly sharp images?



The nitty gritty scientific side of lens sharpness

Now on to the nitty gritty scientific stuff. If good long-lens technique is used, the next step to achieving sharp photos is lens selection. This is where photographers quibble and argue over whether or not a lens is sharp.

When cameras and lenses are produced in factories, the manufacturers test them to ensure that they are within certain tolerances. Some lenses may have an element group set half a millimeter further to the front than other lenses of the same model. Some cameras may have a sensor that is placed 1 millimeter further back in the camera than another. Other cameras may have a lens mount that is slightly twisted. Quality manufacturers analyze their products for these variations in each camera and lens, but it simply is not possible to ensure perfect uniformity. As long as the camera or lens falls within a certain tolerance range so as to ensure that it is not completely defective, it is shipped to the consumer. Photographers often talk about a bad “copy” of a lens or a bad “copy” of a camera. They mean that the particular product they received did not perform as well as most products of the same make and model.

Some lenses may perform well on some cameras and poorly on others, so it is impossible to tell if a camera or lens is a bad copy by testing it on only one camera or with only one copy of a lens. When purchasing a telephoto lens, it is important to test the lens on your camera. Check for sharpness and see if the copy of the lens you’ve received produces sharp images with the copy of

the camera you own. Higher-end DSLRs have a feature called “Lens Micro-adjustment.” This feature will train the camera how to adjust itself to match the lens and overcome some of the minor variations in lens models.

Another consideration is the sharpness of lenses at varying focal lengths. Every zoom lens will be sharper at some focal lengths than others. Almost universally, the shortest focal length and the longest focal length of a zoom lens will be softer than somewhere in the middle of the zoom range. When testing lenses and considering what focal length should be used to shoot an animal, keep this fact in mind.

Having established that each copy of a lens may work differently on specific copies of cameras, and that lenses are sharper at some focal lengths than others, I hesitantly present one more factor that impacts the sharpness of a lens. All lenses are sharper at some aperture values than at others. Most lenses are sharpest at either $f/8$ or $f/11$ as it is in the middle of the aperture values that the camera is capable of using. When at all possible, use these aperture value and the overall sharpness of the image will drastically improve. Even cheap lenses are sharper at medium focal lengths than even the most expensive lenses at their maximum apertures.

All right, but what exactly is sharpness? Sharpness is a term used to describe a lens’s ability to resolve edges and reproduce fine detail. The scientific terms are acutance and microcontrast.

Acutance is the ability of a lens to show fine edges without any blur along the edge. Sharp lenses will show hard lines without any bleeding of the line onto the space next to it.

Microcontrast is the ability of a lens to show the finest details in an image. It is the measure of how fine of a point it can reproduce. Our eyes are subject to less-than-perfect microcontrast just like lenses are. For example, if you were to bunch together thousands of sewing needles and look at the needle end of the bunch, you would be able to see each individual needle when up close to the bunch. However, if you were to step several feet away, you would only see the bunch as a whole. It would look like one big grey piece of metal instead of thousands of tiny needle heads.

In wildlife photography, microcontrast is especially applicable when shooting furry or feathered animals. The minute detail in the fur or feathers can only be shown recorded if a lens with good microcontrast is used. One easy way to check for microcontrast in a lens is to look at the

eyelashes of the animal. If they blur together and each individual hair is not distinct, then the image lacks microcontrast.

More than any other type of photography, wildlife photographers should pay the closest attention to sharpness. To increase the sharpness of your images, start with your long lens technique. Go through each step you take when shooting and consider how you could maximize the stability of your camera. Then, consider your lenses and whether a sharper lens, or a better copy of the sharp lens, is needed.

Quick and random wildlife tip!

Sometimes, while shooting wildlife photography, it's easy to focus so much on the animal that one forgets to pay attention to the landscape surrounding it. Pay attention to the backgrounds and don't be afraid to make the animal a foreground element in a landscape shot. You might call it a wildlife-scape!

Chapter Three: Bird photography

Bird photography is a topic wide enough to fill several books in and of itself, but for a beginning or intermediate wildlife photographer, a few techniques need to be understood before venturing off into this tremendously challenging area of photography.



Because of the wide wingspan of many birds, many photographers make the beginner mistake of using too shallow of depth-of-field. This produces blurry wings on the body of birds. For example, I once shot an eagle attacking a field mouse. The shots were terribly rushed to capture the action and I made the mistake of using too low of an aperture. Because bald eagles have such a wide wingspan, the wing tips were out of focus but the head was in focus. The amateur photographer to whom I showed the photo thought that the image was not sharp, but in reality the image was tack sharp in the body of the eagle. The problem was that the short depth of field made the wings blurry. Either way, the photo was ruined. For most wildlife photography, higher apertures of $f/8$ or $f/11$ are appropriate for larger animals in many situations. Also, most lenses are sharper at these medium apertures.

Similar to the wingspan consideration is that of beak sharpness. When shooting a tight headshot of a bird, photographers commonly make the mistake of instinctively focusing on the eyes of the bird. While it is vital to capture in-focus eyes on wildlife, if a bird with a long beak is shot, the end of the beak, will be completely blurry and will ruin the image. The answer to this problem of getting the beak and eyes in focus is to focus one-third the way up the bird's beak. This will render the tip of the beak acceptably sharp and maximize the depth-of-field so that the eye is also sharp. This tip is, of course, in addition to the obvious answer of using a slightly higher aperture as well.

Unlike the previous chapter where shooting from a low-angle was discussed, bird photography is best shot from the bird's eye level or above. Why? Because the key to finding the correct angle for wildlife photography is to achieve a unique perspective. Rarely do we see birds at eye level or under us. Generally, birds soar far above the ground, so finding locations where eye-level or above shots can be taken will produce the best results for wildlife photography.

When shooting flying birds in the air, consider the background. While some images of a bird soaring through the deep blue sky can be compelling, generally a more contrasty and interesting background will yield a better photograph. To accomplish this, shoot the birds soon after take-off while it is still gaining altitude. At this moment, the bird will likely fly in front of trees or other greenery, providing a perfect background for your shot.

When shooting light-colored birds, exposure must be precise or the fine detail in the feathers will be lost due to over-exposure. Generally, when I shoot a light-colored bird, I automatically reduce my exposure compensation by $1/3$ or $2/3$ of a stop. As long as the background is not totally under-exposed, this will ensure that I maintain detail in the light-colored feathers. Nothing could be worse than taking beautiful images of exotic birds only to load the images on the computer and see that they look like big sheets of white with no detail in the feathers.



Quick and random wildlife photography tip!

Most wildlife photos look best when one animal fills the frame; however, in some situations, the impressive part of the scene in front of you is the interaction between animals or the quantity of animals. Don't be afraid to use a wide-angle lens and capture these aspects of wildlife photography as well!

Chapter Four: How to get close to wild animals

Some people have an 800mm lens. The rest of the world works feverishly to get close to animals in order to fill the frame, but usually has little success. I've spent most of my life chasing animals in the wild and have learned that knowing how to find and approach wild animals is the most important aspect of bird photography. Most photographers with at least the basic skills will be able to produce great wildlife images as long as they can get close enough.

The first rule of stalking wild animals is to be ready for an encounter at any moment. I was once stalking black bear in Idaho. I knew that with the low-light conditions I would have to get within 40 yards of the bear to be able to shoot it. I spent nearly a week hiking through the forest and looking for signs of bear. While searching, I heard a sound over a small ridge and climbed up it to investigate. Suddenly, I found myself within 10 feet of a bear cub. I was so surprised that I stood there stunned for approximately 10 seconds just staring at it. Then, suddenly, the sow (the mother bear) burst out of a bush toward me in an effort to protect her young. I stepped back and had to use bear spray to fend off the impending attack. What lesson can be learned from this failure? Be ready to shoot at absolutely any moment. If I had been prepared, I could have taken a few incredible images of those bear from close range, but I was so surprised that I missed my opportunity.



A part of being ready for a wildlife encounter is to prepare one's camera. This means disabling all sounds on the camera and flash. Shooting in live view has the advantage of minimizing the number of mirror flips up and down and therefore minimizes the sound made by the camera.

While photographic adventures such as chasing black bear in Idaho can be exhilarating and produce wonderful frames, most wildlife photographers have more success in less-remote areas. When I shoot wading birds in Florida, I often do a significant amount of scouting and talking with other photographers to find the best locations. Typically, tourists and inexperienced wildlife photographers attempt to find the most remote locations to find birds in the deepest corners of the Everglades; however, animals in remote locations are not used to humans and will not allow for a close approach. The best place to photograph most types of wildlife is in common tourist locations where the animals are accustomed to having people present. While inexperienced photographers spend a week trudging through the Everglades and only get within 100 yards of an egret, I commonly sit five feet away from them at the local beach. Keep in mind, however, that shooting animals in untouched locations has the advantage of beautiful backgrounds and more rare species, but this chapter deals only with how to get close to wild animals.

Approaching animals successfully requires using every possible technique to prevent the animal from becoming spooked and leaving the scene. This starts with good camouflage. It is common knowledge that many animals, such as deer and bear, are colorblind; however, camouflage is just as important when shooting these species as any other. Even if the animals cannot detect the color of the camouflage, they can detect shapes. The purpose of camo is to make the human shape blend into the background, and camo accomplishes this even if the animal is colorblind. Some photographers even choose to purchase lens wraps to place on their lenses in order to camouflage them.

Humans rely on the sense of sight more than any other sense, but many animals use their sense of smell as a primary method of detecting predators. While photographers often only consider the sense of sight, it is vital to remember to cover one's human smell when approaching animals such as deer, fox, wolves, or bear. The simplest way to do this is to wash clothing in water without any detergent two or three times to remove any chemical smells and purchase cover scent from your nearest outdoor supply store. Other animals, such as many birds, do not pay any

attention to smell. Get to know the species of animal you are seeking to photograph to know if scent is an important consideration.

Once a photographer has covered herself with camo and masked her scent, she must learn how to physically approach wild animals. Lets suppose you spot an osprey nesting in a tree about 100 yards away. With only a 300mm lens, you realize that a closer subject-to-lens distance is required. If you were to simply walk toward the osprey on its nest which is low to the ground, it is unlikely that it will stay on its nest as you approach. The answer to this common wildlife photography situation is to walk extremely slowly and approach from an angle. Walk slowly and deliberately and be careful not to make too much noise with your feet on the ground. Walking slowly applies not only to approaching an animal you've already spotted, but also when walking through trails to find game. Also, animals are much less intimidated by humans when we approach from an angle rather than straight toward their face. Many wildlife photographers approach in a zig-zag pattern so the animal doesn't realize that you are walking toward it.

Now you know how to prepare yourself and your camera for close encounters with wildlife, but how do you find the wildlife? There are many factors to consider. First of all, knowing the species is vital to knowing what time of day they are most active. For most species, this will be early morning and late evening. When stalking these animals which are out in the early morning and late evening, get into position before the animals arrive. For example, if you are interested in photographing fox, you'll know that they are largely nocturnal, so your only hope of finding them will be in the few hours of light before or after the night time. Rather than arriving at the watering hole where you know there are fox just as it becomes light enough to shoot, the better choice is to arrive at that watering hole at least an hour before sunrise. By doing this, you can sit quietly and not disturb the area when the animals approach.

If you aren't sure where to find good locations for wildlife photography, think like the animals do. Where will food be found? Generally the answer is around some type of water source. If you need further guidance and cannot find an area to shoot wildlife, go online and check through hunting websites. If the species you are searching for is one that can be hunted, such as ducks, goose, deer, elk, bear, or many other animals, then hunting forums will undoubtedly hold answers to your question.

In some areas, however, it is more practical to approach animals from a vehicle rather than stalking them on foot. This subject was lightly treated in the chapter on sharpness, where it was mentioned that when a car is turned on, the vibrations can make images blurry. The trouble is that as soon as the car is turned off, the animals often get spooked and run away. To help curb this problem, one technique is to turn off the engine of the car as you coast to a stop near the animals. This makes for a more gradual stop and is less likely to scare the animals. Obviously, turning off a moving car can be dangerous, so use this technique with care.

If approach by foot or vehicle is impractical, consider a technique used by many sports photographers. When a sports photographer shoots basketball and wants to get a shot of a slam dunk from the perspective of being behind the glass backboard, the photographer will mount the camera to the back of the backboard and trigger it remotely. This can also be effective in wildlife photography. Suppose you would like to take a photo of goldfinches near a known nest. The goldfinches will not approach the nest if you are too close, but a hidden camera could be effective. Simply hide the camera and focus it on the nest. Then, use a sync cord or a remote trigger release to trigger the camera just at the moment that the goldfinches land on the nest. Use care in utilizing this technique so that you don't disturb the wildlife.

A bird blind is a small camouflage tent used by photographers and birders to sit undetected in areas known to hold birds. Sitting in a bird blind is a great way to capture birds, but requires great patience. The best tip for wildlife photographers who choose to sit in a bird blind is to choose an elevated position to set up the bird blind. This allows the photographer a better angle-of-view for shooting wildlife.

No matter what technique you use to capture wildlife images at close range, knowledge of the species will help you to know when to back off and when a closer approach will be tolerated. I was once shooting a deer with an inexperienced photographer when the deer snorted. I immediately knew that the deer could smell us and felt threatened. Consequently, I froze in my tracks and didn't move. The inexperienced photographer next to me thought the deer was simply sneezing and continued to approach. Needless to say, the deer ran away and the opportunity to photograph it was lost. Every species of animal has similar signs that will let you know whether it is comfortable. For example, bear stick their noses up in the air and sniff, wolves growl, and anhinga spread their wings. You can either research the species you are trying to stalk to better

understand what signs show they feel threatened, or you can learn the hard way—by staring at deer tails as they run away, bird feathers as they flap, and snakes as they slither under a rock.

Quick and random wildlife photography tip!

Purchase a can of bear spray for approximately \$20—it may save your life! Bear spray is similar to Mace, but the canisters are far more powerful. When shooting dangerous species, photographers always run the risk of spooking the animals and triggering an attack. Bear spray can be effective on many species of animals. It's easy to keep in a holster in your belt and adds some peace of mind when in the woods alone. I never thought I'd need bear spray but carried it at the insistence of my wife. Sure enough, I was charged by a bear the same year I bought it.

Chapter Five: Capturing the action

When captured in a photo, sleeping animals look indistinguishable from dead animals. Capture life, movement, and survival in your wildlife photography to enliven the image. It isn't always easy to find animals while they are running, hunting, or doing interesting things. The only way to capture these rare moments when animals move quickly is to be patient and stay focused while near an animal. In a split second, an animal that is sitting peacefully may jump up and charge off into the forest. Be prepared at every moment.

Action shots require slightly different composition than many other shots. Viewers of your photography do not want to feel that they are missing a significant portion of the scene. If you take a photo of a cheetah sprinting toward the left side of the frame, if the image is cropped right at the cheetah's nose, the viewer will wonder what the cheetah is chasing. By providing active open space in front of the cheetah, the viewer will not be distracted by wondering what is in front of the animal and will instead focus on the animal itself. Do not forget: when framing a shot of a moving animal, allow some blank open space in front of the animal's path. This is called active space.

When fast-moving action is occurring in front of you, knowing how to properly set up your camera is more important than ever. Suppose you shoot a horse as it runs toward you. By the time your camera finds focus on the animal and takes the picture, the horse will have moved several feet closer to the camera. This means that the horse will never be in sharp focus. The answer to this situation is to set the camera on AI Servo Mode (Canon) or Continuous Focus (Nikon). Many photographers make the mistake of choosing AI Focus rather than AI Servo. AI Focus is an out-dated technology that, in my opinion, should be removed from cameras entirely. AI Servo (or continuous focus) predicts where the subject of the photo will move and continues to focus at every second until the shot is taken. In the example of the horse running toward you, if you were in AI Servo mode, almost all of the photos would be in crisp focus because the camera would predict that the horse would continue to move forward at approximately the same pace and adjust the focus accordingly.

While the camera is capable of using this technology to improve the focus on moving subjects, the lens also plays a vital part in obtaining good focus of wildlife. The longer the focal range of the camera, the longer the more area the focus ring has to cover. This means that a lens with an extremely long range such as 50-500mm will be slower at focusing than a lens with a smaller range of focal lengths such as a 100-400mm lens. The 50-500mm lens has 450 millimeters of focal range, while the 100-400mm has 300 millimeters of focal range. This is because most DSLR focus systems use contrast to determine focus. The lens will search through the entire range of focusing distances until the camera finds maximum contrast and tells the lens to stop moving. So a lens with fewer focal lengths to search will find focus faster than lenses with a wide range. For this reason, many action photographers prefer prime lenses (lenses with a fixed focal length that cannot be zoomed). Prime lenses almost always autofocus faster than zoom lenses.

High-end lenses also come with a focus-limiter. This restricts the range of focus so that a lens does not have to hunt through so many focus distances to get the image in sharp focus. If your lens has this feature, it can be very useful for shooting wildlife. Make sure the “macro” setting is turned off!

Different lenses also come with a variety of motors which are used to obtain focus. Some focus motors are significantly faster than others. Each lens will perform somewhat differently, but a

general rule is to look for lenses with silent-wave motors. Silent wave motors use ultrasonic traveling waves, and convert them to rotational energy in order to focus. Each camera manufacturer uses a different acronym to designate that a lens has this technology. Canon uses the acronym USM, Nikon uses the acronym SWM, and Sigma uses the acronym HSM. You can easily determine if your lens has this technology by looking at the name of the lens. For example, on the so-called Bigma lens, you will see that the lens uses the acronym HSM in the sea of other acronyms: “Sigma 50-500mm f/4.5-6.3 APO DG OS HSM SLD Ultra Telephoto Zoom Lens. Learning to check for this technology in a new wildlife lens will produce drastically improved autofocus speeds.

There are two basic methods for capturing action shots of wildlife. The first is to freeze the motion, and the second is to show the action by using creative blur. As a general rule, freezing the action is best used when the action is sudden and powerful, such as a wolf chasing a baby deer. Allowing for creative blur is generally more appropriate where the action is smooth and graceful, such as a hawk flying over a river.



Freezing the action

Freezing the action in a scene is one of the most challenging photographic techniques for photographers to master. You’ll remember that the shutter speed on your camera controls how long the camera sensor records light. Therefore, a fast shutter speed will only allow the image to

be recorded for a fraction of a second—before anything in the scene has a chance to change position. If a slow shutter speed is used on a scene with a lot of movement, the resulting image will be blurry because objects in the frame will move while the image is being recorded. You will also recall that a fast shutter speed reduces the amount of light available to the camera. Therefore, large apertures and high ISOs are needed to obtain a proper exposure. When photographing large wildlife such as deer, wolves, eagles, or herons, a large aperture would make part of the animal out of focus because aperture also controls depth-of-field. In these situations where a fast shutter speed and a mid-range aperture must be used, the only method available to brighten the image will be to use ISO.

Modern digital cameras have improved greatly in their ability to use high ISO levels with minimal digital noise. Still, however, this is often a limitation on how high an ISO can be used. Test your specific camera model before shooting wildlife to determine how high of an ISO you can use without introducing too much grain into the image. When freezing the action of a moving animal during the darker hours of morning and evening, you will almost always want to use the highest ISO available that does not introduce excessive amounts of noise.

With the ISO level on your camera boosted up, you will undoubtedly wonder how fast of a shutter speed is necessary to freeze the action in a scene. The answer to this question can only be answered by experience, but I will give an example of a few situations that may be a helpful reference. A hummingbird in flight will generally require a shutter speed of $1/8000^{\text{th}}$ of a second; A deer running through water will require a shutter speed of approximately $1/1600^{\text{th}}$ of a second. A pelican in flight will require a shutter speed of approximately $1/6000^{\text{th}}$ of a second. A shore bird walking in the water will require a shutter speed of approximately $1/800^{\text{th}}$ of a second.

When animals are moving quickly, even short breaks between shots can render an entirely different image because the animal will change facial expressions and positions quickly. It would be ideal to simply hold down the shutter button until the action ends, but your camera can usually only shoot 10 or 20 photographs before it has to pause and process them all in a buffer before shooting can continue. If a photographer fills up the camera's buffer before the action is over, he will have to sit and watch the action until the camera is done processing. To avoid filling the camera's buffer with too many shots at once, shoot in bursts of two or three shots until the peak moment of action. For example, suppose an osprey is circling over the water and you

can tell that it will soon dive down to catch a fish. Follow the osprey with your camera and shoot in quick bursts of two or three images and then pause for one or two seconds before the next burst, then, when the osprey actually dives down to the water, you can simply hold the shutter button down and let it shoot as fast as the camera is capable. By using this method, you will still capture some shots of the bird circling its prey, but have enough buffer available to capture the peak action when the fish is caught. Shooting in bursts also helps with the sharpness of the photo. When the shutter button is depressed, the camera will shift slightly from the pressure of your finger. For the second image, there will be less vibration in the camera because your finger has not moved since the first shot.

Using creative blur to show movement

In some situations, allowing creative blur can improve a photograph. Photography has the limitation of only showing the viewer one short moment in time. Using creative blur pushes the limits of this restriction by showing how the scene changes over a slightly longer period of time.

The most common photographic technique in this space is called panning. Panning is when a photographer moves the lens to stay focused on an animal as it moves. Because the lens swings at the same speed as the animal, the animal will remain sharp even though a slow shutter speed is used. The background, however, is not moving so it will be blurred as the lens swings across it. For example, if you see an owl soaring through the forest, you could use a slow shutter speed of approximately $1/25^{\text{th}}$ of a second, swing the lens to stay on the owl as it moves, and click the shutter during the swing. The owl will be sharp because the lens was moving parallel with it, but the stationary background will reflect creative motion blur.

The success of panning shots is dependent on obtaining perfect sharpness on the animal. If the animal is not perfectly sharp, the shot will simply look blurry. Panning works perfectly for shooting cars and bikes because the whole object moves at the same speed and in the direction (the wheels actually good blurring in a circle). Panning in wildlife photography is more difficult because the wings of birds and the legs of animals are moving in different directions than the swing of the lens (obviously the lens isn't bouncing up and down to follow the wings of a flying bird, it's just swinging in the direction that the bird is traveling). Sometimes this blurring of the wing beats or the leg movements looks acceptable in an image, but often it detracts from the sharpness of the animal. The answer to this problem is to take panning shots while the wings are not moving as a bird soars or when the legs don't move, such as when an animal leaps through

the air over an object as it is running. In these situations, the animal is still moving, but its legs/wings will not ruin the sharpness of the animal.

The speed of the animal will dictate the appropriate shutter speed for use in a panning shot. A general recipe for a successful panning shot is a lens of at least 100mm and a shutter speed of approximately $1/25^{\text{th}}$ of a second.

Panning takes a lot of practice to perfect. For most photographers, it is an exercise in luck to see if the subject ended up sharp or not. There is, however, a better approach. The problem that most photographers make is allowing the position of the subject to shift within the frame during the shot. Even if the moving bird is within the frame during the whole $1/25^{\text{th}}$ of a second exposure, it may have moved slightly within the frame if the swinging does not perfectly match the animal's speed. To improve your odds of getting sharp shots, look at the focus points in your viewfinder. Decide where you want the animal's eye to be in the frame and which focus point covers that spot. Then, while you swing with the animal, aim the focus point to stay exactly over the eye of the animal. Simply keeping the animal in the frame is too large of a target for getting sharp images and allows for too much play. Aiming at a small part of the animal with a small focus point is much more precise. Aim small, miss small.



Quick and random wildlife photography tip!

Sometimes you'll try everything you can, but will be unable to get a well-lit shot of an animal. Don't lose the opportunity to take a few shots of the animal in interesting poses anyway. These shots can be used to produce an animal silhouette in Photoshop. This is an easy technique that is sure to produce stunning results. Simply take the photo of the posed animal and then cut out the animal in Photoshop and fill it with black. Now go out and take a sunset picture where you wish the animal were posing. Usually these shots will be best after the sun has dipped below the horizon—the very last rays of light for the day. Now place the silhouetted animal in the sunset scene in Photoshop. It looks like you captured a perfect silhouette of a well-posed animal in front of a sunset, but you didn't!

Chapter Six: Lighting in wildlife photography

The first and most important lesson in anyone's photography education is that lighting is what divides an average photo from a great photo. Animals, unfortunately, aren't particularly interested in posing for the camera so that the light falls perfectly on its face. For this reason, many beginning wildlife photographers simply leave lighting to luck and hope that the lighting will work out. This chapter aims at teaching beginning and intermediate wildlife photographers how to take control of the most important aspect of any photo—the lighting.

Some lighting fixes can be as simple as changing position. One of my favorite locations for bird photography is a river near my home. Having shot the location many times, I know that I need to shoot on the east side of the river in the mornings and the west side of the river in the evenings. Because the sun rises in the east, if I am positioned on the east bank at sunrise, I will have the bodies and faces of the birds front-lit with the sun to my back. In the evening when the sun sets to the west, I can similarly guarantee that the animals will be properly front-lit. Back-lighting actually has some uses, but it is generally undesirable because it leaves the face and body of the animal dull and shaded.

When shooting next to a river, photographers can generally predict where the animals will stand; however, other situations are not as straight-forward. Suppose you're shooting wild hogs in a

desert location like Texas. As you walk slowly and quietly through the underbrush, you suddenly spot a hog off to your side. It will not be possible to reposition yourself to shoot the hog in perfect light. In this situation, you're stuck with the natural lighting conditions. In situations like these, the only way to salvage the shot is to use flash.

Flash photography is not only useful for when the light is coming from the wrong direction (such as backlighting), but also for fixing hard light. During the middle of the day, the lighting puts too much contrast on the subject. The harsh shadows caused by mid-day lighting are distracting. Fill flash can be used as a way to fill in the shadows and lessen the contrast in the lighting.

Rarely is lighting used as a primary light source in wildlife photography because it produces a dark or black background that looks unnatural. In most situations, when someone talks about using flash in wildlife photography, they mean fill flash.

Fill flash means using an underpowered amount of artificial lighting to lessen the impact of shadows. Many beginning photographers are tempted to use the on-camera flash for this purpose, but this course of action will result in devastatingly flat and unappealing lighting. Fill flash requires an external flash unit (some people refer to external flash units as "flash guns" or use the generic term "strobes"). To understand how to use flash to fill in the shadows on wildlife, some foundational principles of lighting must be laid.



Understanding the principles of lighting

Beautiful lighting has three characteristics: directionality, color, and relative size. Why is it that point-and-shoot images with flash look so flat? The flash is located only inches away from the lens and removes shadows which would show shape and texture. If the light source is moved further away from the camera—even a foot or two—the lighting casts beautiful shadows which define the subject. Therefore, the first principle of quality lighting is that it is directional, meaning that the direction from which the light source illuminates the subject will impact the overall quality of light on the subject.

The second principle of good lighting is color. Most photographers notice that when they shoot inside, their images look orange. Cameras are not as adept at changing to meet varying light conditions as are our eyes. It has to use technology to analyze whether the color temperature from a light source has a yellow, green, blue, green, or magenta color cast to it. Good lighting will match the color of the ambient light in the scene so that the lighting is cohesive rather than one light being one color and another light having a different color temperature.

The third principle of good lighting is relative size. Counter-intuitively, a light placed close to a subject produces softer light than the same light if it were across the room. The further away from the subject, the harder the light. It is not the actual distance between the light source and the subject that determines if light is hard or soft, but the relative size of the light. When the light source is far away from the subject, it looks smaller to the subject than if it were up close. Anything a photographer can do to increase the size of the light source will produce softer lighting. This doesn't mean that you need to buy the biggest flash you can find. There are better ways of increasing the size of a flash. For example, studio photographers shoot the flash into an umbrella and let the large umbrella reflect the light back at the subject. The new light source, the umbrella, is far larger than the flash and will consequently produce a softer light on the subject.

Applying the principles of lighting to fill flash in wildlife photography

First of all, we learned that good lighting needs to be directional. This is the reason that the built-in flash simply will not work—it is too close to the lens and will produce flat lighting. In an ideal world, photographers would put the flash ten feet off to the side of the camera and trigger it remotely like portrait photographers. Unfortunately, no animal would allow you the time to set up such a complicated lighting scheme. Instead, wildlife photographers do the best they can to get the light far away from the lens by using a flash bracket. A flash bracket,

especially one made for wildlife photography, will hold the flash approximately two feet above the lens. This not only keeps the flash from being blocked by the long lens, but it adds to the directionality of the light. Another compelling reason to use a flash bracket is that it reduces the risk of red-eye in the wildlife. Red eye, which is caused by light reflecting from the eye at the same angle as the camera, will not occur if the flash is far enough away from the lens.

The second principle of light that we discussed is the color of the light. Sunrises and sunsets, which are the most common times of day to shoot wildlife photography, generally have a warm color cast to the ambient (ambient light just means the light that is naturally available) light. External flash units produce a whiter light that will not mesh in with the available light as well. This is where colored gels should be used. Gels are actually not the consistency of gel at all. Gels look like an overhead projector's transparency and are colored to change the color of the light. A set of gels costs only \$10 from any online store and will drastically impact how useful your flash becomes for wildlife photography. It's a great thing to have in the gear bag for when it's needed, but most of the time you'll find that fill flash doesn't require a gel.

The third principle of good lighting is relative size of the light. If it were possible to bounce the flash into an umbrella or off a wall, the lighting would be much improved; however, this is not possible for shooting wildlife photography. In fact, generally photographers are concerned with getting a flash that is powerful enough to light the subject at all. Keep in mind, however, that when the flash is set to low power in an attempt to fill in the shadows, it has a similar effect to increasing the size of the light because you use all of the size of the available light and add in the size of the external flash. So, in a way, light from a fill flash is always large.

If a photographer is in a situation where she can approach to within 15 feet, any external flash will be powerful enough to throw light onto the subject; however, due to the inverse square rule (no, I won't bore you with it other than to say that it means that light falls off at an incredible rate as distance increases), the external flash alone will do nothing to reach an animal that is 75 feet away. When animals are further away, a flash extender is needed.

A flash extender is an attachment that goes on the end of an external flash and magnifies it. It uses a simple Fresnel lens (it's French, so the "s" is silent: "fruh-nell") to magnify the light and throw it ten times further than the flash alone could reach. The most popular brand of flash extender is the Better Beamer. It's a no-brainer purchase at the fantastic price of about \$35. One

caution when using a flash extender with a Fresnel lens is to take it off when not in use. On a bright day, the sun will be so magnified through it that it will melt your flash. For some reason, many photographers don't believe this warning until they have a \$500 melted flash. Fresnel lenses are so powerful that slightly larger versions will melt a penny in a matter of seconds.



Quick and random wildlife photography tip!

Deer, as well as many other antlered animals such as elk and caribou, lose their antlers some time during the winter and grow them back during the summer months. If you plan on shooting a buck with its antlers, the best time is early fall. In early fall, the antlers are fully grown and are covered with “velvet” or thin fur on the antlers. This velvet on the antlers will catch any light behind it and glow around the antlers.

Chapter Seven: The elements of an outstanding wildlife photo

All of the topics previously mentioned in this book are essential aspects of professional wildlife photography technique; however, even if your technique is perfect, the photo may not impress anyone. So what makes a wildlife photo beautiful or captivating? This chapter's cursory overview of the components of a quality wildlife photo will aid you in evaluating your own work. The foundational elements of beautiful wildlife photography are emotion, transforming the viewer in time and place, capturing the moment, and lighting.

Emotion

When a photograph evokes an emotion within the viewer, it causes that person to engage with the photo. Some connection between the photo and the viewer is made. This connection makes a photo stand out in the viewer's mind more than other photographs that people are accustomed to seeing every day.

In discussing emotion, the common mistake is to think only of the emotion of the animal and not the emotion it will invoke in the viewer. For example, a photo of a seagull yawning with its mouth wide open will probably not make the viewer of the photograph feel tired. Rather, she will probably find it cute and laugh. Similarly, a photo of an angry lion roaring will not make the viewer of the photograph angry. The facial expression of the animal is not necessarily what determines the reaction that the viewer will have to a photo.

Capturing photographs that are powerful enough to touch the emotions of the viewer is a technique that takes a lifetime to perfect. To take photographs that will stir the emotions of the viewer, the photographer must engage with the animal. Passively watching an animal while focusing on camera settings will distract the photographer from analyzing the situation from a creative point-of-view. The first step to capturing emotion is to master the camera so that it becomes second nature. Then, pay attention to the animal and consider what strikes you as humorous, powerful, touching, or wondrous about what the animal does. Last, consider what composition will best highlight the emotion and make it come out in the photo.

Transforming the viewer in time and place

No type of media better transforms the viewer in time and place than movies. Next time you watch a movie, notice how much effort is put into making each scene different or more perfect than what we are used to seeing on a daily basis. For example, the main character seems to always live in a plush New York penthouse or an extremely poor downtown shack. Neither of

these situations are familiar to the average viewer of a film, so the viewer is transformed to a new and exciting time and place. Similarly, average-looking people are rarely the main characters. Why? Because we want to be transformed to a place with beautiful people.

All types of photography—including wildlife photography—should follow this principle just as the movies do. No, the answer is not to take an egret to a penthouse or a snake to Central Square. The correct application of the principle in wildlife photography is to show the natural environment surrounding the animal. This allows the viewer to take clues as to where the photographer is trying to place the viewer. These visual cues will help immerse the viewer in a landscape rather than simply viewing a headshot of an animal without any clue as to where the viewer is being taken.

Part of transforming the viewer to a new place can be accomplished by simply choosing a good background for the animal. I am struck by the number of the best wildlife photographers who say that they first find a background—an interesting tree, a beautiful mountain, a pristine lake—and then patiently wait by that landmark for an animal to place itself in front of the compelling background.

Not long ago, a student sent me a gorgeous picture of a cougar. As soon as I looked at the image, my eye first noticed the detail in the fur—perfectly sharp. Then, my eye naturally looked at the image as a whole. I could see the black crisscross lines of a chain-link fence in the background. In that instant, the experience of viewing the photograph was ruined. I was not being transformed into an unknown animal world, I was being merely taken to the local zoo.

Capturing the moment

Unlike video, which includes context to any scene by recording what happens before, during, and after each action, photographs must communicate a story in a single frozen frame. The core of this aspect of a winning photograph is uniqueness. The moment a deer breathes is not as captivating as the moment that it sprints away from a mountain lion. Capturing unique moments allows the viewer to see what he desires to see. We all desire to see unique actions by wildlife because they are noteworthy. No one would go home and tell their family that they saw a deer breathe, but most anyone would update their Facebook status if they saw a deer being chased by a mountain lion.

To capture unique moments, photographers must be willing to exercise patience and persistence. Capturing unique moments often means long hours in bird blinds, or stalking deer in camouflage, etc. Unique wildlife moments happen every day, but they usually occur outside the traditional “touristy” wildlife habitats. Photographers must be willing to go into the untamed animal world—deep in the forests, mountains, prairies, or jungles to find these moments. By doing so, it will be much more difficult to find and approach animals because they are not used to humans; however, when you are able to get close enough, the results may be stunning as you capture them in untouched habitats where they are more likely to display unique behavior.

When you finally approach an animal and are able to shoot, be prepared at every second to shoot. The animal could suddenly interact with another animal in an interesting way, or the bird may spring into flight, etc.

Lighting

It is difficult to overstate the impact lighting has on a photo. Lighting is the most basic element of good photography. Some aspects of lighting, such as catch-lights and flash technique, have been covered previously. Here, lighting is mentioned to highlight the impact the lighting has on the mood of the scene.

In music, the mood of an orchestra is founded in the percussion section (the people who play the drums). A fast-paced snare drum instantly communicates a march or song with great action. Cymbals communicate the peak of movement. The timpani communicates a heroic sound. Percussion instruments are to music as lighting is to photography.

No matter how you photograph it, an animal photo taken in the moonlight will always feel mysterious. No matter how you photograph it, a photograph of any animal in early morning light will convey beauty. No matter how you photograph it, animal photos taken at high noon will look more dull than it would have looked with interesting lighting (as was discussed earlier, this is because the light is not directional—it is straight above the subject).

Learning how to use different types of light to convey different moods and feelings, is as simple as paying attention to your own photography. Review the last one or two hundred wildlife images you’ve taken. Are you stuck in a lighting rut? Do the images convey different moods, or has your photography become pigeon-holed? If so, make it a conscious decision to shake up your lighting. Try a different angle to catch the light in a different way, use the trees to cast

interesting shadows on the scene. Try adding flash to your wildlife photography. Go photograph wildlife in a storm, when lighting will undoubtedly have a unique quality. Whatever you do, do not allow your wildlife photography to be reduced to one mood alone.

Chapter Eight: A Brief Conclusion

Malcolm Gladwell, in his best-selling book “Outliers” claims that mastery of any subject takes 10,000 hours of practice. If you want to be a master wildlife photographer, look at 10,000 wildlife images. With the advent of the internet, finding the images is simple. Spend every free minute you have in looking at the very best wildlife imagery available. Analyze each photo briefly to determine what makes it compelling. Think critically as to why some photos are not captivating. As you spend the time to look at 10,000 beautiful wildlife photos, your eye for good photography will be sharpened and you’ll begin to develop your own style by finding out what type of wildlife photography impresses you.

After viewing 10,000 wildlife images, get out into the field and spend 10,000 hours shooting wildlife. For most of us, it will be impossible or unlikely to spend this much time, but the idea is to immerse yourself completely in wildlife photography. Over days and months and years of practicing this exciting and relaxing art form, you will eventually master wildlife photography. I believe that’s the reason you bought this book.

As you view photographs and practice wildlife photography, you will have the unique opportunity of seeing God’s creations in their raw and untainted form. Applying the principles and tips found in this book will aid you in presenting beautiful animals and their habitat in a way that highlights the natural beauty.



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