

Nature & Wildlife Photography

If you are an outdoor person, lover of nature, and own a DSLR or DSLM (the M is for Mirrorless), then this book is for you. It is somewhat interesting, and sometimes detailed and boring, but read those parts anyway—because it will get you to where you need to be with your nature and wildlife photography.

The Essentials of Nature Photography, Second Edition

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Foreword

February 1984, about 3 1/3 decades ago, I took a course in nature photography taught by Milton Heiberg: two hours every Tuesday night for eight weeks at the offices of *The New York City Audubon Society*. It was the only formal instruction in photography that I ever received. Milton must have been a very good teacher because I have done OK with my photography since then.

Milton Heiberg and I have long shared the same passions: nature—including and especially birds, photography—capturing images of the things that we love to share with others, and teaching—sharing what we know so that others might improve their skills and their results.

In his latest book, *The Essentials of Nature Photography*, Second Edition, Milton will teach you the basics that you will need to get started making great images of birds and animals and flowers and bugs and landscapes and snakes and turtles and gators and the rest. His galleries will inspire you, and his words, written clearly and with purpose, will instruct you.

Knowing what gear to choose is an essential. Understanding your camera and exposure are essentials. Understanding depth of field is an essential. Learning to evaluate a situation and to design a pleasing image are essentials. Knowing what to do in the field and understanding histograms when you are there are essentials. Having a clue as to what to do when you get your images onto your computer is an essential. Know how to use flash effectively is an essential.

Milton taught me the essentials of nature photography. In his latest book, he will do the same for you.

Arthur Morris/BIRDS AS ART

www.BIRDSASART-Blog.com

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Indian Lake Estates, FL.

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How to Use This Book

When I pick up a book, I peruse through the table of contents and go to something in that book that interests me at the moment. Read a few paragraphs of that section and wonder what in the world this author is talking about. Then go back, start from the beginning, and find out. It's a reader's choice of course. But if you are a professional, this is a reference book. If you are a novice, start at page 1, and read all parts in sequence.

Part I – The Bare Essentials Consider this book as a holistic approach to nature photography. I have covered the basics of individual topics of camera, lenses, digital darkroom . . . , but cover the details of usage more thoroughly in the specialty chapters of Part II, where they should make more sense. If you are a seasoned photographer, and already use Photoshop and Lightroom, you might want to skim through these Part I chapters as a refresher, and use this book as a reference guide. By the way, if you see something that needs updating, or further explaining to a novice photographer, I would certainly appreciate you're sharing it with me for future editions. My email address is photonat@cfl.rr.com. No spamming please.

Part II – You & Your Subject I said it before and I'll say it again—“*Love your subject more than your camera.*” These chapters discuss how to handle yourself and your gear with respect to your subject, and make great photos. Each chapter is subject specific, and is based on my experiences in the field. If you are a naturalist of any level, and you are enthusiastically trying to capture photos of your chosen subject, then you are in good company. Read the chapters of your choice—and why not all of them. If you are a bird watcher like me, read that chapter, of course, but you may find bits of information in the other chapters that would apply to your specific work. BTW: The rules of composition for all subjects and/or species are discussed in the chapter on

Landscapes. Composition is more graphically described in a landscape, but can be applied to all of photography in general.

Nature is a beautiful and mysterious place. I say that with tongue in cheek. An old friend, a city girl who I was trying to influence with the beauty of the outdoors—after being bitten by a mosquito, told me “. . . Yes, nature is beautiful—IN ITS PLACE!” I handed her the insect repellent. The message in these chapters is preparation for field work—including insect repellent and sun block. But also keeping in mind the processing (the other half) of digital photography while clicking the shutter ie, Photoshop and Lightroom. Think holistically.

Galleries (At the end of each chapter of Part II) This is a bit of braggadocio on my part, but it can be of significant value as examples of having a point of view, and a method of approach and execution. I tried to choose the best work that would convey that message, and discuss the qualities I thought made each photo work. They were selected with a little bit of bickering with Danielle (my editor, wife, and best critic) and include some of what she saw in them as well as my own experience in making them. Also, if you are a pixel-peeping techy, and must know the f/stop and shutter speed (Aaarrrgh!), the gallery captions will contain that metadata.

Part III – Odds & Ends I didn't know what else to call this collection. These are tidbits of information that are worthwhile knowing by themselves, and did not fit in with any particular chapter without being disruptive to that chapter's flow or continuity.

Digital Darkroom Basics

This is the other half of digital photography that I've been talking about.

Let's discuss artwork. If you think of photography as an art, as most people do. And you think about yourself as an artist—as you should. Then think of what you are doing with the camera as creating “artwork.” Not just creating “art.” Your picture making should be done with the computer processing in mind. Consider taking pictures as the art, and processing as the work. Not that one can't be the other. Sometimes we work very hard at planning and getting a great photo, and the inspirational art is born in the computer. The point is you can't have one without the other.

Workflow

The photographer's workflow as I see it, has three major parts.

1. The Camera

Preparing the camera equipment for maximum creativity.

- Shooting mode: A (Nikon & others), Av (Canon), or M (all brands)
- Settings: RAW, RGB 1998, Neutral Picture Style
- Watch closely: Histogram + Exposure Compensation Scale
- Philosophy: Creative Imagination

2. The Computer

Storing and processing the images for output.

- Organize: Library—Date, File number, & Location
- Tools: Lightroom, Photoshop, NIK/Google software plug-ins
- Enhancement: Make SHADOW-HIGHLIGHT-CONTRAST preset

3. The Show

Your visual message to the viewer

- Social media, web site, slide shows, or prints: Direct from Lightroom
- Other media: Export at 300dpi or full size

The Camera

For a complete discussion of camera set-up see page 17 of this chapter.

To review: In the camera's menu, make the following settings:

- A or Av shooting mode. You set the aperture, and the camera sets the shutter speed (manual mode—with training wheels). Or, be familiar with the manual mode—and use it.
- Quality—RAW
- Color space—Adobe RGB 1998
- Picture style—Neutral
- Watch the histogram: The most workable data are in the right-side two-thirds of the graph. Too far to the left loses shadow detail. Too far to the right risks highlight *blowouts* if the data goes past the limits of the f/stop's dynamic range.

Figures 3.17 & 3.18 in the preceding section of this chapter show where most of the best data are in a RAW image

Use the Exposure Compensation Scale: It appears in both the back screen and the eye piece. Get used to using the eye piece so as not to take your eye away from the scene. It should look something like this:

-3 -2 -1 0 +1 +2 +3

To increase or decrease the exposure, find the button on the camera that looks like this:  Many camera models require you to depress this button while turning the control wheel.

TIP: Don't forget to set it back to “0” for the next scene :-).

The Computer: Library, Processing, & Storage

Organization: The advantage of a well-thought-out system is finding an image quickly—or finding it at all. So I label and store all photos using the procedures mentioned below in Lightroom's Library Mode.



Figure 5.5 20060115-9186_Backyard-MOON-2.jpg—with Canon EF 500 f4L IS USM, + Canon EF 1.4x Extender.

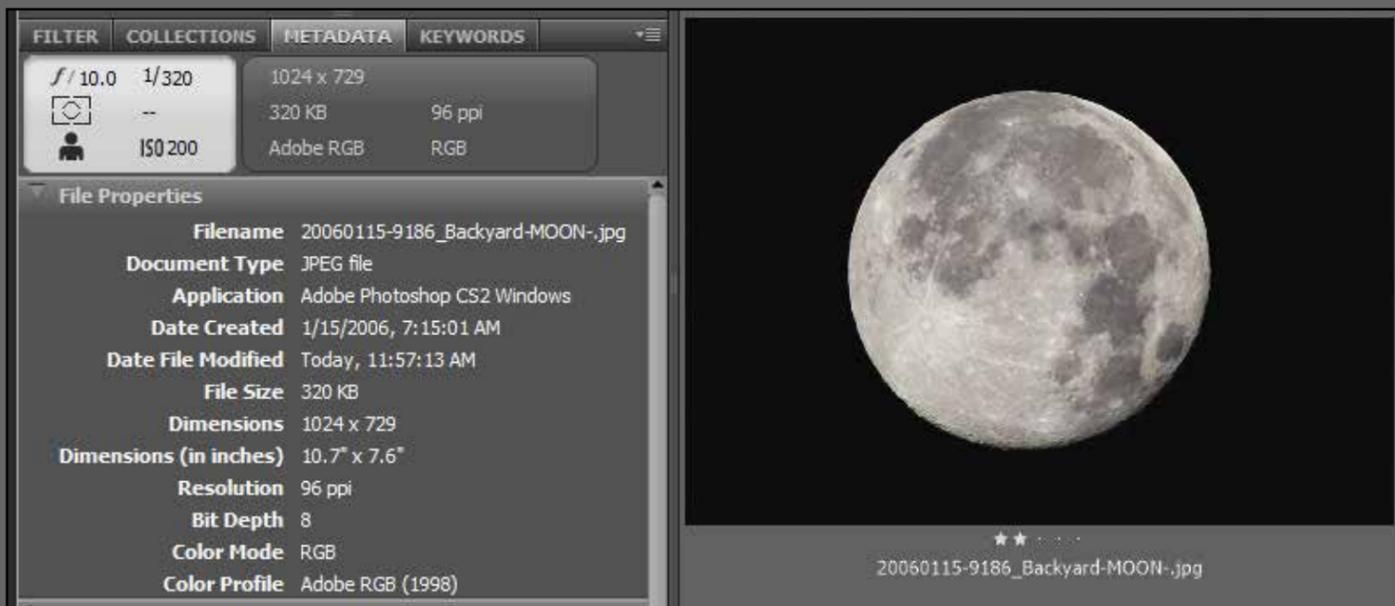


Figure 5.6 20060115-9186_Backyard-MOON-Screenshot.jpg—Metadata.

standard moon photo to superimpose over the blurry, out-of-focus moon.

Exposure of the Moon

Think of a full moon on a clear night as a daylight shot. The sunlight reflected from the moon is the same source as the sunlight reflected from our earth’s landscapes. The only difference is that the light from the moon is reflected first, and then comes through our atmosphere into our view.

Depending on your lens size you may opt for using the spot meter—or better yet, shoot manually, using the “Sunny-16 Rule.” As follows:

$$1/ISO = \text{shutter speed at } f/16 \text{ with full mid-day sunlight.}$$

This formula should give you the same density of results as we see the moon—which is a bit brighter than we want. Much of the moon’s surface is blown out to our eyes, and even a spot meter can be fooled by the vast black sky around the moon. So reducing the exposure by an f/stop will probably help get more moon surface detail (Figures 5.5 & 5.6).

I use this formula minus one f/stop as a starting point. Some especially clear nights may require reducing exposure by two f/stops for a fully detailed moon surface. But beware, it is sometimes difficult to guess at how much haze or dust is in our atmosphere. So bracket your shots up and down by at least two f/stops (EVs).

Assuming you will be using a telephoto lens, you will want to use the middle range of f/stops, ie, if it is an f/5.6 lens with the smallest aperture being f/32, then the middle range would be f/8 to f/16. This is usually referred to as the “sweet spot” of the lens. This area of the lens contains the least impurities of the glass, least aberrations, and ample glass area for the sharpest images.

Also, be aware that the moon is moving faster than it appears to be. So use a fast enough shutter speed.

Photographing Lightning

Lightning may strike anywhere, and getting the dramatic image is relatively easy compared to other nature photography situations. If you’ve been a photographer for a while, you know the old photographer’s secret of suc-

Part II

You & Your Subject

I hate to sound like a skipping CD, and as a nature photographer, I'm assuming you love nature . . . anyway . . . you know the drill—love your subject more than your camera.

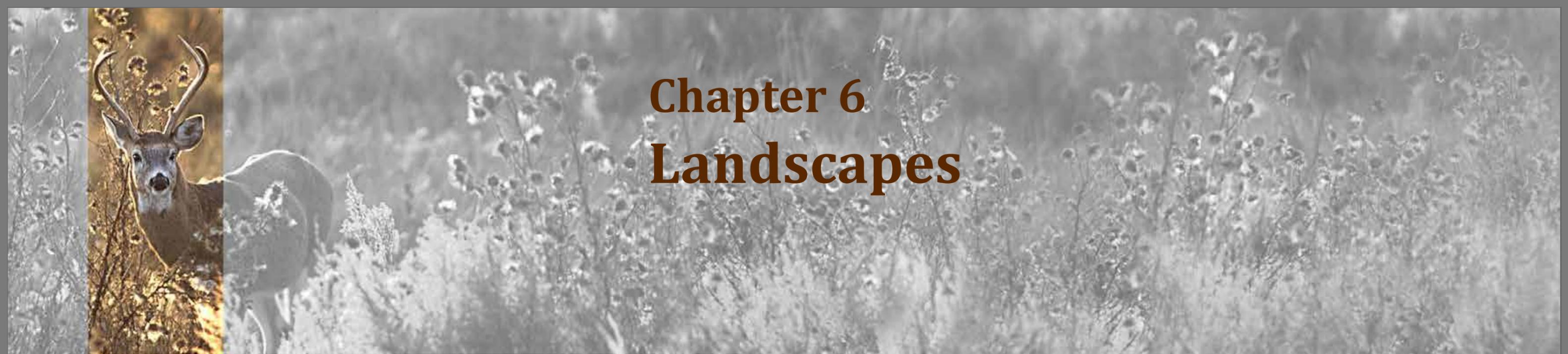
Know your subject well, and know yourself well. In other words, how far can you go with your subject before you may be crossing boundaries. Paparazzi cross boundaries, and so do nature photographers. The trouble is, nature photographers cross them unseen, and usually don't get caught. You may be confident to take risks for your own safety, and I hope you survive those risks. If you take risks that damage the lifestyle and survival of wildlife species, you may get away with it for a while—or always. But if you really, REALLY love your subject (more than your camera), you will find a way to reach your goals without disturbing the subject, and really, REALLY get better photos.

I won't preach any morality in the forthcoming chapters. And I can't give you all you need to know about your specific subjects or yourself. But I will give you all that I can about the situations that I've experienced within the limits of these pages, and wish you the best with good fortune and great photos.



Chapter 6

Landscapes



With landscape photography, as with all nature photography, one basic rule holds true: Yes! Love your subject more than your camera. When this attitude is applied to landscape photography, it means that you are going on a nature walk to examine and appreciate the sand dunes along a barrier reef, the rock formations of a canyon wall, or the sunrise over a favorite pond. You are not going out to “shoot landscapes.” Only after you have appreciated and studied a particular niche of nature’s beauty are you able to record an image of the visual elements that evoke the emotions.

In this chapter we will try to analyze and break down an emotional subject into the hard cold *visual* parts that evoke the emotion. (Ouch!)

Seeing Landscapes

How does one see landscapes? Examine both the scene and the emotion. Is the scene beautiful in itself, or is it moderately good but helped by the sweet smell of jasmine in the air, or by the mood you bring to the scene? Even when looking at the camera’s viewing screen you are still there smelling the jasmine—so to speak. A scene can visually fool you when stimuli to the other senses are present in the same way that a person of average good looks can suddenly take on a new and “visually” beautiful dimension by that person’s verbal charm. That same “charm” may or may not photo-

graph well. So whether your subject is a person, place, or inanimate object, look for the visual qualities.

Content

Content is what is in the picture. It is usually where your eye went first when you came upon the scene. It’s what grabbed you. So, before you put the camera on the scene, examine its content—its main subject (where your eye went first), its supporting subjects, and its forms of composition. Try this little test. Make a rectangle with your hands and frame the area that you think looks good. Bring your hands/frame in closer to your eyes to include more of the scene, and farther away from you to include less. Once you have decided that the content of the scene really is beautiful without music or fragrance, examine the scene still further to determine its visual essence. Is it the broad expanse of the color spectrum on the pre-sunrise horizon? Or is it one segment of the forest where the dark, wet tree trunks stand in contrast to the mist that engulfs the forest? Whatever the visual stimuli may be, isolate the scene in the viewfinder and examine it further.



Figure 6.1 This scene invites the viewer into the photographer's world by allowing enough foreground to mentally step into it and walk across the footbridge and under the arch.

Also note that by lowering the camera to the level of the wooden bridge's handrail, the wide path area was minimized to a size that is in balance with the rest of the forms in the composition.

This isolation may mean zooming in or out, or changing to a lens that better fits the scene, or moving to a better location. Train yourself to become visually sensitive to what makes a good picture. Then, put it in a comfortable space on the frame. Think in terms of *making* the picture. Also consider the *Rules of Composition* described in Chapter 4.

One more important consideration while you are standing there enjoying the scene. You are making this picture for other viewers to enjoy. It is your message that you are sending to the viewer. Wherever applicable, invite the viewer into the scene with some foreground—just enough to mentally step into, and not be an overwhelming form (Figure 6.1).

Once you have isolated the content and subject area in a comfortable frame, re-examine it for form and lighting. If lighting was the original emotion-

provoking element, as it so often is, then you'd best make the exposure quickly before the light changes. If the lighting is less than perfect, you may do better at a different time of day or under different weather conditions.

Here's a few things that help a good landscape photograph:

- A slight overcast will make harsh shadows disappear.
- Fog may block out an undesirable background.
- Backlighting at a different time of day may add a glow to foliage.
- Mountains may be more dramatic if their tops disappeared into storm clouds.
- Consider seasonal changes from spring flowers to fall foliage or snow.



Saint Johns River, FL

Very early spring, when the ground is still cold and mist rises from ponds, rivers, or wet ground. This offers opportunities to capture the misty mood shot.

Canon EOS 7D, f/8 +1, 1/1000 sec.,
ISO 400 Canon 100-400mm
f/4-5.6L II, at 100mm,
handheld from a boat



Orlando Wetlands Park, FL

This is my favorite place to be for a sunrise landscape shoot. I come here quite often, and once in a while something as good as this happens.

Canon EOS 20D, Canon 100-40mm F4-5.6L, f/7.1, 1/250 sec. -0.33, ISO 100, Gitzo tripod with Arca-Swiss Monoball B1 Ball Head



Anticipation 101
Coyote *Canis latrans*
Bosque Del Apache, Santa Fe, New Mexico

This is a lesson in anticipation, when things just might go right. In this case things did.

I missed the splash as a coyote jumped into the lake to catch her duck. And by the time I got to the 500mm lens/camera already on the tripod, she had finished the quick mercy killing—breaking the pintail's neck (1). She picked up the duck and trotted westward (2) toward the road that I was on. In hopes that she would turn south at the road, toward me, I moved to the west side of the road to gain what little cover there was from tall grass. She did! (3)

Knowing that canines depend more on scent than vision, and witnessing that she just had a snout full of water catching that duck, I froze! The only motion was a slight shift in the ball head of my tripod and the shutter release button. Which was activated exactly 78 times for the 3 minutes and 44 seconds of duration—starting at 6:27:27pm. Isn't digital photography wonderful? Automatic notes!

She got close enough for several eye contact shots, of which number 5 is my favorite. It was supper time for both of us, and seeing the hungry look in my eyes, she jumped through the grasses and trotted across the corn field (6).

(All) Canon EOS 5D Mark II, Canon EF500mm f/4L IS USM, f/8, 1/250 sec. -1, ISO 200, Gitzo 548 tripod w/Wimberly head.



Chapter 8

Bird Photography



Of all nature photography subjects, birds present the biggest challenge. So, if you are serious about becoming a good bird photographer, then—as I mentioned in my *Top Ten List*—study the masters (Chapter 10, #5 on the list). There I mentioned Ansel Adams and Elliot Porter as teaching me how to make pictures through their works.

Becoming a Bird Photographer

But when it comes to bird photography, I have to refer you to one of my students, Arthur Morris. A few years after attending my *Nature Photography* class at the New York City Audubon Society in 1984, Artie became known as the world’s premier bird photographer—a title he holds to this day, and which will probably remain long after we’re all gone. The most thorough interview with him was on the TV series *Understanding Photography* with Peggy Farren on September 9, 2016. He not only talks about bird photography tips, but gives much philosophical advice and his own history of what makes him tick. And, yes—it’s on YouTube at:

<https://www.youtube.com/watch?v=HMaV4pwfYyU>

The video is almost book length (1 hour & 27 minutes), so prepare to relax and enjoy, and take notes. In it he also shows some of the most beautiful bird photos you will ever see, and describes how he made them.

BTW: Artie is a perfect example of what I repeat ad nauseam— “Love your

subject more than your camera.” Artie loves birds. Who else in his right mind would slam a \$6,000 lens into the mud just to get down on the level of his subject (Figure 8.1)?

Bird photography is hard work, but very rewarding as you begin to accomplish photos worthy of a print or contest entry. I found it to be my most enjoyable, interesting, absorbing, and educational—and working with some of the most beautiful subjects in nature. I became a bird photographer mostly because of my grandfather’s advice.

My grandfather often jokingly said, “If your pleasure interferes with your business, give up the business.” I understood that as a joke, but I also saw that it was what he did. He loved typography and printing as a hobby,



Figure 8.1 Artie Morris practicing “Love your subject . . .” Who else in his right mind would slam a \$6,000 lens into the mud just to get down on the level of his subject?

quit his day job, and started The Brooklyn Press, Inc., which became the Heiberg's family business. I spent the years of my youth working there with him, and saw how happy he was. He never retired, worked seven days a week in the shop, and died at age ninety—from an accident in the shop. That sent me a message! While I enjoyed working with my grandfather, the lure of birding and my talent as an amateur photographer led me to quit my day job, and become a nature photographer with a specialty in bird photography. I never looked back!

Preparation

With that, the bird photography challenges dropped into my lap. I thought I was good at bird photography until I had to do more than just a sitting bird portrait. The only books worth reading on bird photography were *I Went to the Woods* by Ron Austing, and *Art of Bird Photography* by Eric Hosking. But as good as they were, they are long outdated. Long lenses were clumsy to work with, and film was expensive. So being a bird photographer meant being self taught. And while the academics of birds were overwhelming, I found the best way to learn about bird behavior is to spend time watching them myself.

These days equipment is superb, and there are a multitude of books on bird behavior and bird photography. The one book on bird photography I have to recommend, is the very first completely comprehensible book ever written on the subject. That is Arthur Morris' *The Art of Bird Photography*. It has been called the Bible of bird photography—published in the 1990s, now in its second edition.

Study and Research

Know the birds. Birding is a popular hobby these days. If you are not a birder, then think about becoming



Figure 8.2 Author getting to know the birds. On assignment in Tiberias, Israel, my daughter Kim Ann (also my assistant) found this Palm Dove that had fallen out of the nest just outside of our location studio. She took this photo, and returned the bird to the nest.

one. At least hang out with someone who is. You do not have to be a diehard life-list keeper in competition with other birders. To me the competition part of birding always seemed a bit silly. Especially after seeing the *The Big Year* movie. A great film, but that kind of birder I am not!

The first thing you might want to do is get a good field guide. The oldest traditional guide is *Field Guide to the Birds* by Roger Tory Peterson. Original edition was 1933. The latest of many revisions is 2010 as of this printing. Another popular book is *The Sibley Guide to the Birds* by David Allen Sibley. Also, for a reference text is *The Sibley Guide to Bird Life and Behavior* by the same author.

But don't spend all of your time in the library. Put the field guide in your back pocket (It probably won't fit in that pocket—so buy cargo pants :-)), and get out in the field. If you hate cargo pants or carrying extra weight, I don't blame you, so get a bird ID app for your cell phone. I like National Audubon's *Audubon Birds Pro - A Field Guide to North American Birds*.

Get to really know the birds. And let the birds get to know you (Figures 8.2 & 8.3). What I found to be true is—if you have the patience and you are relaxed around birds, especially shorebirds, they will come closer. In fact, as I was taking the photos in Figures 8.4 through 8.6, some of the sandpipers and plovers were walking in front of the lens, and blurring the shots I was trying to get at a distance. One actually jumped on top of my lens to get past it.

Equipment

The challenge of equipment is its size, weight, learning curve, and expense. Bird feathers and features must be very sharp, and the best quality lenses are expensive. As mentioned earlier in this volume, buy the camera and



Figure 8.3 Let the birds get to know you. When this woman stepped out of her house with a jar of millet, this starling greeted her.

Behavioral



A Study in Animal Behavior—He scolds!

Bald Eagle *Haliaeetus leucocephalus*

If you think marital problems are a strictly a human dilemma, then spend some time bird watching. I had no idea what they said to each other, but it couldn't be much different from the last encounter with your spouse. The time stamps on my exposure files counted 3 hours and 10 minutes beginning at sunrise. For the full photo essay of this "X" rated event, go to:

<http://www.miltonheiberg.com/WEB-SLIDE-SHOWS/Bald-Eagles-Mating/index.html>

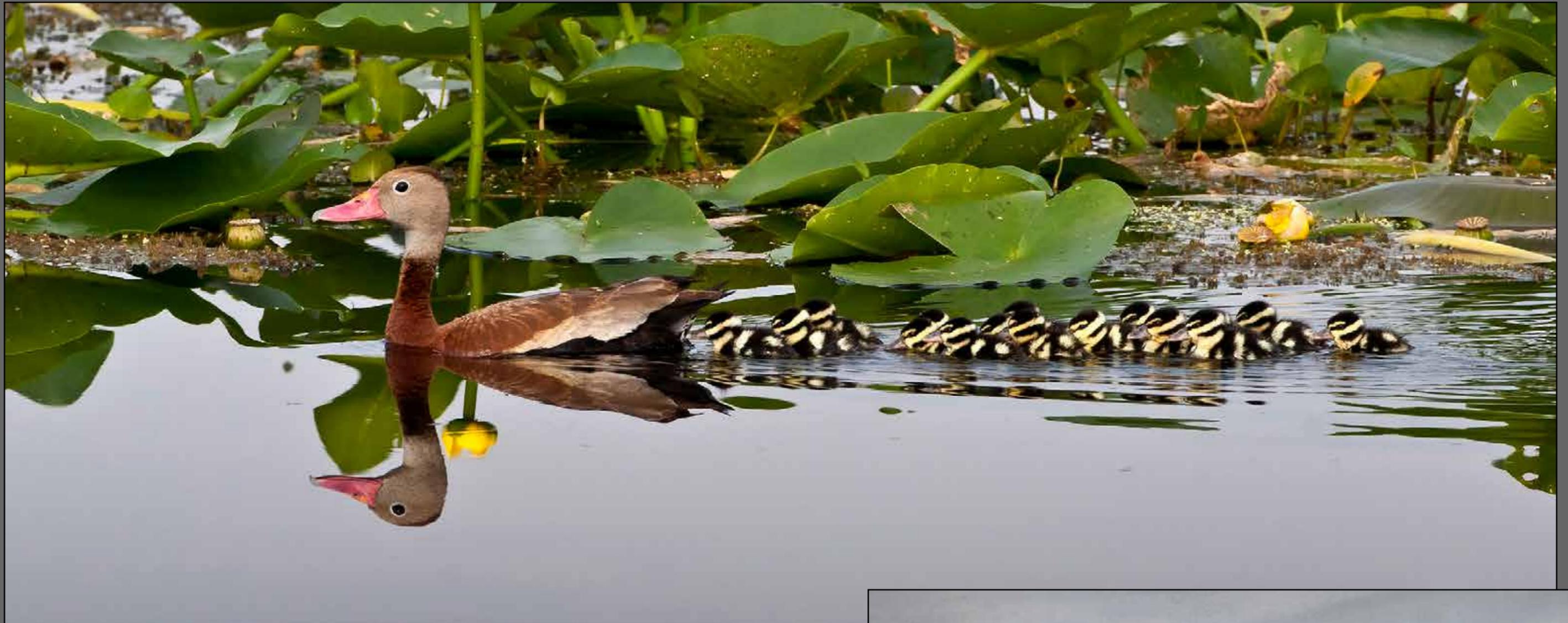
Canon EOS 7D, Canon 500mm f/4 AF IS lens, f/8, 1/350 sec. +1.5, ISO 200, Gitzo 548 tripod w/Wimberly head

She retaliates!



She wins!





Precocial Birds

Black-bellied Whistling-Duck *Dendrocygna autumnalis*

Top: Most Anatidae (Ducks, Geese, and Swans) are able to swim and feed themselves almost immediately at birth. They instinctively follow their mother into the water, and follow her everywhere. They reproduce in large numbers—a safety feature due to the high mortality rate from underwater predators such as large fish, snakes, turtles, and alligators. The brood in these photos show fourteen ducklings.

Right: An example of seize the moment. Precocial birds seem to know who the leader is, right out of the eggshell. This happens, but not that often in front of my camera.

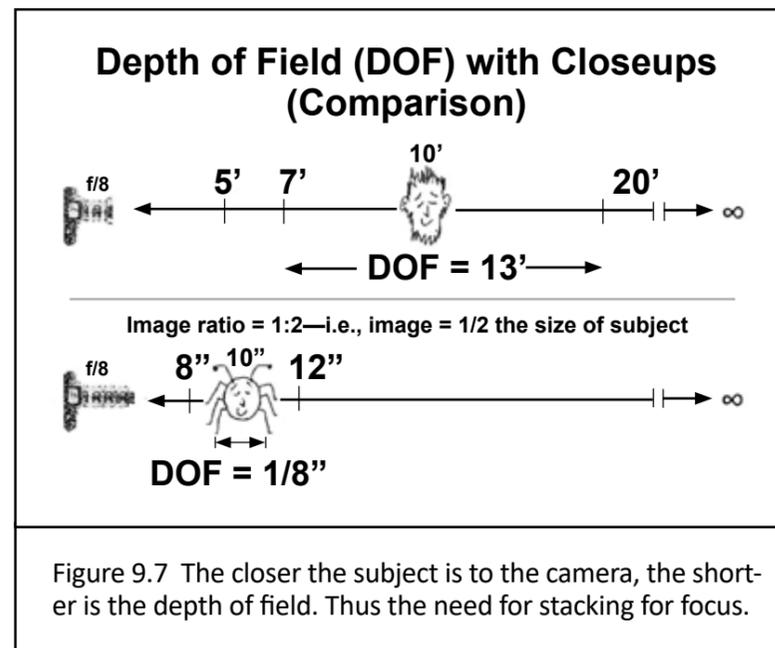
Top: Canon EOS 10D, Canon EF500mm f/4L IS USM lens, f/11, 1/750sec., ISO 800, Gitzo 548 tripod w/Wimberly head
Right: Canon EOS 10D, Canon EF500mm f/4L IS USM lens, f/11, 1/125 sec., ISO 200, Gitzo 548 tripod w/Wimberly head



to accomplish this is to fix the lens-to-focal plane distance and move the whole camera-bellows-lens assembly back and forth on a focusing rail.

- First, establish the image size with the lens-to-focal-plane distance.
- Then, move the camera-lens assembly back and forth until the subject is in perfect focus.

Until you get the knack of this arrangement, you may have to keep adjusting the lens-to-focal plane distance as you move the whole camera assembly back and forth to balance the right size and distance in the viewfinder. Once the right size is attained, perfect focus may be attained with significantly little change in image size (Figure 9.6).



Stacking for Focus (see steps on following page)

This technique involves taking a series of frames of a closeup subject at sequential points along the depth of the subject. Because the depth of field of a closeup subject is so short, we are only able to get a small portion of the subject in perfect focus in one shot (Figure 9.7). So, we simply take a bunch of shots and sew them together in Photoshop. That's the simple explanation. After one or two experiments you will get the knack of it. The steps may be long, but the results are fantastic. Here are the steps:



Figures 9.8–9.14 Each of the top six exposures were made at sequential focal points along the subject. The final product here was blended in Photoshop, tweaked with color, density, and sharpening as would be with any normal photo.

Stacking Steps

1. Camera should be on a sturdy tripod.
2. Subject must be stable. This means no breeze on flower, no motion from insect.
3. Set lens to **Manual Focus** and camera to **Manual Exposure**.
4. Take multiple images in sequential focus points from nearest point of subject to farthest.
5. Bring images into Photoshop.
6. Go to **File/Scripts/Load Files into Stack**.
7. Click **Add Open Files**.
8. Check box: **Attempt to Automatically Align Images**.
9. Click **OK**.
10. Select all layers in the Layers palette when it appears.
11. Go to **Edit/Auto-Blend Layers**.
12. Layers will now have Layer masks. You may do some refining at this point—if necessary. This takes some practice and patience.
13. Go to **Layer/Merge Layers** to finish the project.
14. Crop and do any additional normal processing (Figures 9.8–9.14).

Once this process is mastered, you may as well advance to handheld exposures for stacking—or at least with a slightly flexible tripod. Because these focus points are so close together, just lean into the tripod as you expose ten frames per second. That should give you all of the sequential exposures you'll need.

Magnification and Exposure

The high magnification of macro photography comes with some problems involving the magnification of light along with magnification of the subject.

Keep in mind that for any given lens, the f/stop number measures the ability of that lens to gather and transmit light when the lens is focused at infinity.

The bright light reflected from your subject becomes extremely dim when viewed through the lens. The closer the subject, the longer the lens' extension, and the higher the magnification it creates; thus, the *thinner* the reflected light reaching the focal plane. When using available light, the only way to overcome this dilemma is with a longer exposure or higher ISO.

When any subject in focus moves from infinity toward the camera, the lens is moving away from the focal plane at the same time. The gathered light that is transmitted through the lens is being spread slightly thinner onto the same focal plane (usually unnoticed and compensated for by the camera's metering system) until the subject gets very close. Then the change becomes progressively noticeable. Now only a very small area of light, normally reflected from a large area, is being transmitted, magnified, and spread thin over the image frame.

For the Technically Minded

The correct aperture and shutter speed may be determined by the camera's metering system. Automatic exposure systems have also added the convenience of compensation for backlighting, or dominant backgrounds, at the touch of a button. A seemingly correct exposure may be made with the photographer not having the slightest idea of what is happening in terms of exposure factors for high magnification ratios. If you want to be in control of your exposures, then you must become somewhat familiar with exposure factors for closeup work. An easy method to learn and use in the field is:

EXPOSURE FACTOR FOR APERTURE COMPENSATION

Image Ratio	Exposure Factor
1:8 – 1:4	1.5x – ½ f/stop
1:3 – 1:2	2x or 1 – 1 f/stop
2:3 – 3:4	3x or 1 – 1 ½ f/stops
1:1	4x – 2 f/stops

Figure 9.15 Exposure factor table.

- Take a reading with a handheld meter (or the camera's meter using a normal lens). A handheld incident meter is best (See Chapter 2, *Exposure Meters*).
- Determine the image size ratio. Know that the vertical dimension

There is a phenomena throughout the northern states that happens infrequently. The ground surface is well below freezing, a sudden warm front brings in a soft rain, and everything in sight becomes covered with ice. It is damaging to trees—weighing down and breaking major limbs. But for the nature photographer, it presents beautiful landscapes and endless photo ops for closeup photographs. Figures 9.31 and 9.32 show an example of a situation that I was unfamiliar with and, accidentally discovered a remedy that I have used on subsequent occasions. The ice storm started in the late winter afternoon, and it soon became dark. With a flash-mounted camera and an umbrella—for me and the camera, not the subject. I went through my New Jersey backyard, finding beautiful ice-encased stuff. When the rain stopped for a while, the ice started to form a crusty surface (Figure 9.31). This was fine, and several great photos were made. But while handling the surface of the ice for positioning, my warm hands would melt the crustiness of the ice and create a glass-like transparency of the fruits and stems. So I continued running my fingers over the rest of the ice surfaces of each subject. Please find another example in the gallery section at the end of this chapter.



Figure 9.31 The original crusty ice surface.



Figure 9.32 Wild Rose hips in ice. The surfaces that I touched with my warm hands, smoothed out the crusty surface and created a glass-like clear transparent view of the stem and rose hips.



Flying Insects

Honey Bee *Alpinia zerumbet*
Shell Ginger *Zingiberaceae alpinia*

This is one of over one-thousand exposures made during this take. It is one of five that is actually presentable. The way to insure getting good results of flying insects is to spend the time (persistence). And shoot at 10 frames per second when you see the bee coming near your chosen flower (anticipation).

Canon EOS 7D Mark II, Canon EF100-400mm f/4.5-5.6L IS II USM lens, f/5.6, 1/500sec. -1, ISO 800, handheld

That's all folks

'til next time

