Successful Nature Photographs and How to Create Them

by William Bitman

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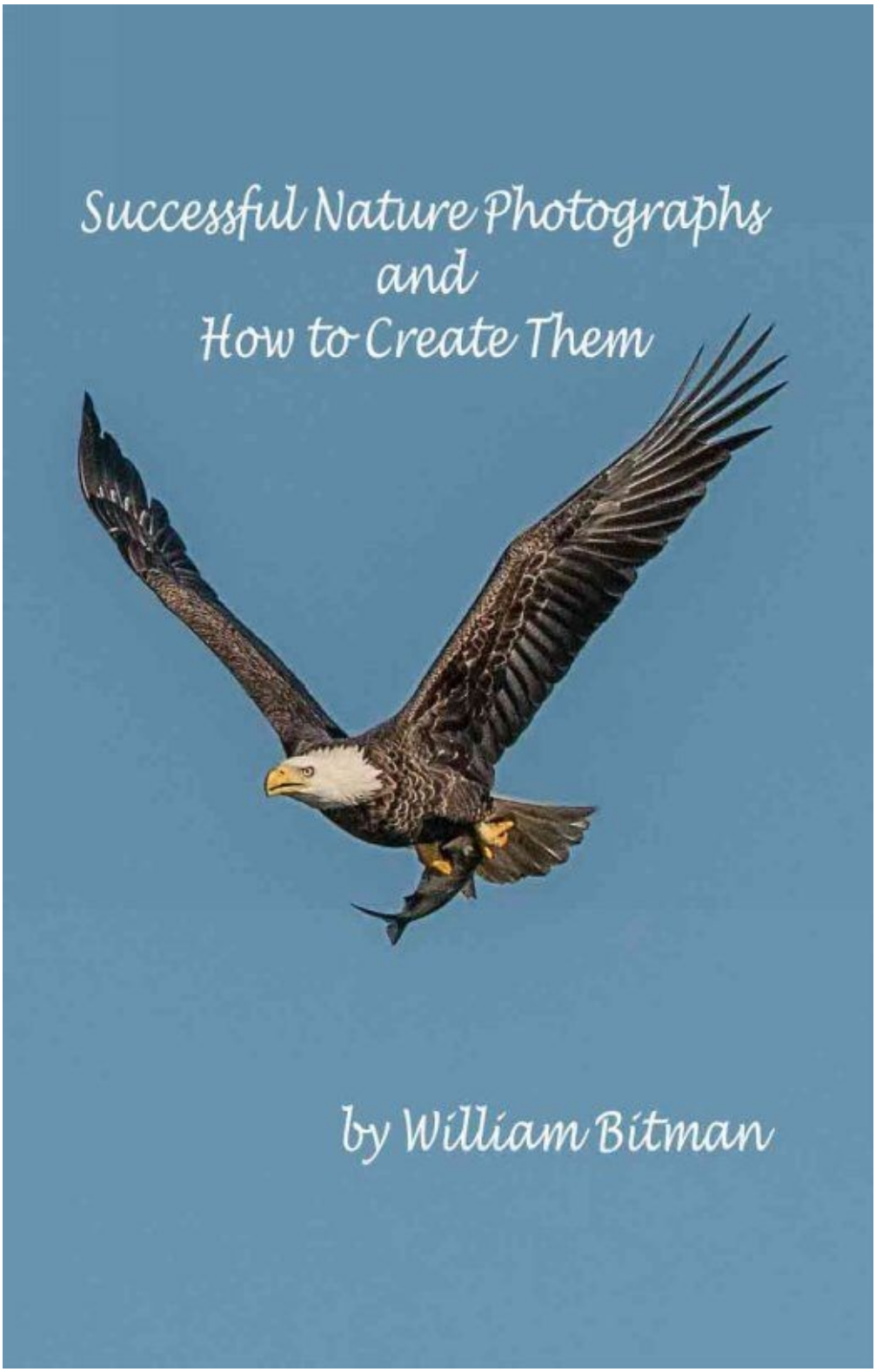
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About This Book

Successful Nature Photographs is a guide for improving your photographic abilities. I have grouped different subject categories into separate chapters, starting with subjects that are more accessible and require less expensive equipment.

The following introduces the elements and techniques for successful photography. I will explore their application with specific images throughout the book.

The cover image is presented and discussed in Chapter 23 on bird flight.

Elements Of Successful Images

A successful image is one that people want to look at more than once. The elements of a successful image are:

1) an interesting subject,

2) in an interesting situation,

3) captured utilizing excellent technique.

Elements of excellent technique are:

1) sharpness of the main subject(s),

2) compelling composition, and

3) proper exposure, in which there are details in the shadows and no overblown highlights.

Compositional elements include:

1) placement of subjects,

2) arrangements of secondary objects, lines, shadows, and colors,

3) a leveled view,

4) angle of view,

5) lens focal length,

6) foreground/background relationship, and

7) inclusion and exclusion of objects.

Typical reasons that an image falls short of being successful include:

1) blurry main subject,

2) uninteresting subject,

3) distracting background, or

4) too much contrast, especially overblown highlights.

Fundamentals Of Good Technique

The following discussion provides a foundation for the notes on images. Please see the Glossary for explanations of terms.

Exposure is a result of:

1) capture mode (e.g., manual, shutter (also called time), aperture, program, or auto),

2) shutter speed,

3) aperture,

4) ISO, and

5) white balance.

Shutter speed, aperture setting, and steadiness of the camera determine sharpness of your subject. Along with discussing sharpness, this discussion will include proper exposure.

Basic Technique For Still Subjects

For still subjects, the ISO can be set very low, such as ISO100 to avoid digital noise. For most still subjects, shutter speed is not critical and you can let it depend on the aperture you select. This enables you to select an aperture that provides enough depth of field for your subject. For instance, a sweeping landscape calls for a small aperture, such as f/16 so that both foreground and background are in sharp focus. If, however, you are isolating a specific subject and you want all other objects to be a soft blur, then you have the freedom of selecting a large aperture, such as f/4, which produces a narrow depth of field.

The basic steps for photographing a still subject are:

1. Set the ISO mode to “static ISO” so that the camera doesn’t automatically increase the ISO unnecessarily. This is usually a menu setting.

2. Set the ISO to a low setting: usually ISO 100 or 200.

3. Set the camera exposure mode to aperture priority,

4. Set the aperture to an appropriate value based on your subject. This allows the camera

to determine the shutter speed.

5. For situations where the shutter speed that the camera selects is slow, such as may occur at dawn, dusk, and on cloudy days, you may need camera support, such as a tripod, in order to prevent blur due to camera movement. Alternatively, you can increase the ISO setting in such a situation.

Lens selection and placement have the greatest affect on composition. Additionally, you can fine-tune your composition in post-processing. These actions will be discussed throughout the book for relevant images.

Basic Technique For Moving Subjects

For moving subjects, first determine how fast a shutter speed is necessary to freeze subject movement. Taking test shots can help you determine this. Then determine the depth of field you need to keep the entire subject in focus. Set your camera exposure mode to manual so that your selected shutter speed and aperture remain as you set them. For a combination of shutter speed and aperture to produce a correct exposure, the ISO must be set correctly based on the lighting conditions. Therefore, the best method is to set the ISO mode to automatic. This allows the camera to set the ISO as high as necessary to produce a correct exposure. Although very high ISO values can add digital noise to your image, it is better to capture the image rather than be left with an unusable underexposed image. There are ways in software to reduce digital noise during post processing.

Subjects that move very fast, may require a camera that can capture images at a fast rate, such as 10 fps in order to increase the likelihood that you capture just the right moment.

Unlike still life and landscape photography, moving subjects require you to quickly move the camera to catch the action, whether you hand-hold or use a tripod fitted with a responsive tripod head. With a non-active subject, you might have the time to select and mount the lens that frames your vision perfectly. But with most moving subjects, you are fortunate when you can get a sharp image, even if the subject is somewhere in a corner of the frame. Most of my action shots have been composed on the computer. First I rotate the image so that the horizon is horizontal, or the eyes of the subject present a satisfying pose, usually along the horizontal axis. Then I crop around the subject in order to create a composition that presents a balanced image. These two simple adjustments can turn a diffuse lopsided image into a satisfying work of art that shows off both your subject and your artistic and technical ability as a photographer.

Consummate Backyard Photographer

Most of my photographs have been taken within 50 miles of my house. I make use of my backyard, nearby gardens, parks, zoos, aquariums, and butterfly gardens. My portfolio has benefitted from the fact that although I have mostly lived in Maryland, I recently had lived in Southern California for 3 years, thus expanding my backyard opportunities. In addition, once a year I take a vacation to a national park or wildlife refuge area. Of the approximately 1,000 nature images in my portfolio, about 100 of them were taken in my Maryland backyard, and about 100 were taken in my California backyard, while it lasted. Another 100 were taken in local parks. I took about 150 images during trips to national parks and wildlife areas. About 500 of my images were taken at local zoos and 50 were taken at local aquariums. Over the 5 year period during which I frequented zoos once a week, I averaged about 2 successful images per trip.

Patience

The key to building a quality portfolio is to start a session with the mindset that you only need one really good image per session to add to your collection. Calmly concentrate on a single exhibit or opportunity. Don't feel that you need to rush to the next exhibit. I found that if I rush from exhibit to exhibit with a catch-as-catch-can approach, I come home with only one photo that people actually enjoy viewing. Instead, select a subject of interest, and watch and wait for a truly special moment to occur. Once you know you have captured an excellent image, then you can move on to another photo opportunity.

Catching action at just the right moment provides a clear element of success. With portraits, a factor for success is to include an extra element of interest in the image. It could be an unusual pose, a meaningful interaction, a dynamic expression, an expressive glance, an interesting background object, or a compelling color scheme. Without something extra, the image is just yet another picture of a you-name-it. People have seen hundreds of photos of whatever it is you are photographing. The objective is to make your photo unique and interesting.

What Camera Should I Buy?

For those readers considering equipment purchases, my advice is to start with a camera you can handle comfortably, and which fits your budget. Before you purchase anything, read objective equipment reviews and try out equipment at camera shops. Ask other photographers what they find to be best for them.

From 2003 through 2007, I had taken about 100 successful nature images with a succession of 3 different digital point-and-shoot zoom cameras. As I gained experience, I

wanted to try different lenses for different types of subjects and situations. Therefore, in 2008 I purchased an APS camera. During the next 4.5 years using APS cameras, I added about 500 successful nature images to my portfolio. During this time period, I made the decision to purchase only high quality full frame lenses. The more I photographed, the more I realized that my time spent in the field is valuable. Going back to a location with a better lens in order to create a really good image of something special that I took a snapshot of previously, just doesn't work. Time and travel are the most costly commodities. My growing success motivated me in 2012 to purchase a full frame digital camera optimized for action and low light situations. Because of my earlier decision, I didn't have to replace any of my lenses. Eventually I also purchased a 36 MP high resolution full frame camera as well. Over the past 2.5 years I have been able to add another 400 nature images to my portfolio.

Although I made the transition from point-and-shoot camera to full frame cameras, many professional photographers use APS cameras with f/3.5 or f/4 lenses (rather than f/2.8 lenses) and create excellent images for weddings, studio portraits, commercial work, and nature images.

The message is: use the camera equipment you have and evaluate the level of success you are achieving. If you want to take your photographs to a higher level, talk to experienced photographers about what it would take to do so.

As you gain experience with your camera, you may find that there are situations where a steady support, such as a monopod or tripod, enables a truly sharp image. However, a tripod must be stable enough to withstand winds. You will determine for yourself if and when you need stable support. A major factor with regard to tripod use is the head. A smoothly operating ball head allows you to be responsive to action. A long lens head and/or a gimbal head is essential for long heavy telephoto lenses. However, many people greatly prefer the run-and-gun style. For those of you who do utilize a tripod, a remote release, either cabled or wireless can help make images even sharper. Going another step further, using the mirror-lockup mode on your camera will further reduce blur.

Once you have settled into a set of camera gear, you will be faced with how to pack and carry your equipment under various situations. I have an extra long backpack for my long telephoto lens, in which I also place my camera and tele-extenders. I carry my tripod with gimbal head in my hand. When I fly, I pack my carry-on sized photo backpack (no wheels) in which I place my travel tripod and ball head, along with a camera and basic lenses. I also have a roller backpack for when I am doing a lot of walking in urban areas. In addition I have a camera sling bag when I just want to take a camera and lens, perhaps with one extra lens – and no tripod.

File Size Considerations

The size of an image file determines what you can do with your image. Publishers require images that have a resolution of 300 ppi and whose TIF file is at least 50 MB. In addition, the size of a file determines how large an enlargement you can successfully print.

A 36 MP high resolution full frame camera that resolves to 300 ppi can create raw files that are 44 MB in size. Processing such a file can result in a 120 MB TIF file. An advantage of high MP capture is that you can selectively compose the image to emphasize your subject. Cropping the captured image to just one quarter of the original area, still results in a TIFF file that is about 50 MB that can easily be enlarged to a 2-foot print or can be considered for professional publication.

A camera that captures 16 MP can also produce professional sized images. Typically, such a camera produces 300 ppi raw files that are 22 MB in size. The resulting TIF file is 50 MB and can easily be printed to 16x11 inches. If larger prints are needed, interpolation functions can be applied in post processing to upsize your image files.

Organizing Your Image Files

It is strongly recommend that you save your successful original and raw image files in a separate folder. I give each file a meaningful name based on the subject and its category. I also give a unique ID to each image as part of its name because publishers and stock agencies refer to images by their IDs. I post process each original image and create a master TIF image file. My master files have been corrected by lowering highlights, opening shadows, maximizing clarity, and reducing digital noise. I also clean up background distractions using various software tools such as healing, cloning, and context-sensitive fill. I place these master files in my master image folder. From a master file I create any and all cropping, orientations (wide, tall, square), aspect ratios, and image size variations.

Chapter 1. Flowers

Image 1. Crocus – original capture.

This pair of crocuses in early spring in my backyard was captured with a point-and-shoot camera in macro mode, hand-held, keeping the camera low to the ground, about 12” from the subject.

I set the shutter to 1/50 second to eliminate blur due to camera shake. For the 35mm focal length lens setting that I used, 1/50 second is enough to keep the subject sharp because it is at the reciprocal of the lens focal length. The camera produced a correct exposure when I set ISO to 200. I waited for the wind to stop so that subject motion would not blur the petals and leaves.

The orange pistil surrounded by the yellow stamens against the lavender petals make this an interesting image. The second smaller crocus behind the main subject adds an element of balance and interest. The subject is sharp enough to see the striated texture of the petals. The next image is a crop of this image.

Image 2. Crocus - Tight Composition of Previous Image

I cropped the previous image to emphasize the subject. It also eliminates distracting and unnecessary background. A truly sharp image gives you the option of cropping the image and create a dynamic composition.

Image 3. Lotus Blossom – as captured.

On a sunny day, large thin flower petals, such as those of this lotus, display their translucent silky texture. The closest point of the flower to the farthest is about 10 inches. Therefore, I set the aperture to a relatively small opening of f/13 to provide depth of field adequate to keep the entire flower sharply in focus. To eliminate blur caused by wind, I set the shutter speed to 1/1600 second. An ISO of 500 provided proper exposure.

I included some of the leaves to provide a pleasing frame around the flower. However, the resolution of the image is fine enough to support extreme enlargements and tight compositions. Image 4 closes in on the flower alone.

In addition, the uniquely interesting pistil and stamens of the lotus deserve their own composition. Image 5 isolates the inner parts of the flower while retaining enough of the petals to showcase their silky texture.

Image 4. Lotus Blossom Flower – crop of image 3.

Image 5. Lotus Blosson – close crop of image 3.

Image 6. Bird of Paradise Flower.

I captured this bird-of-paradise flower hand-held, also with my point and shoot zoom camera.

These plants have the magic combination of primary colors red, yellow, blue, and green. This image also coveys the texture of surfaces which gives you an even greater experience of their beauty.

Image 7. White Hibiscus.

This pair of white hibiscus flowers along a stone wall was also captured hand-held using a point-and-shoot zoom camera. There are a number of compositional aspects that help to make this image moderately successful.

First, the 2 flowers create a sense of heightened perspective because the flower on the right is far enough away to appear much smaller than the closer flower, even though in reality the two flowers are the same size. In order to make both flowers sharp, I closed down the aperture to its smallest setting, thus maximizing the depth of field.

Second, Each red pistil/stamen is framed against a white petal of its flower. However, I should have knelt down further to provide more white background around the red pistil along the bottom edge of the petal.

Image 8. White Orchid.

The composition of this pair of orchids is similar to the previous image. For this image, however, I had a camera that takes lenses and I used a macro lens. To be able to have a slow shutter speed if necessary, I used a tripod. In this image, the foreground orchid is sharp. The background orchid is soft but with just enough sharpness to let you know it is a companion flower. I set the aperture to a medium setting of f/5.6 which blurred the background orchid just enough. To get a high resolution image, I set the ISO to 200. The camera computed that a shutter speed of 1/125 of a second is the correct exposure. Many people are able to handhold such an exposure, especially with a lens that provides image stabilization. But I prefer to use a tripod in case subjects are in a shadow and need a longer (slower) exposure.

Image 9. Maroon Orchid.

I captured this orchid at a local indoor orchid garden with a high-resolution full frame camera and macro lens. The curves of the flower and the bilateral symmetry provide interest, as do its bristles and texture.

Image 10. Maroon Orchid - close-up.

This close-up composition of the previous image shows how sharp the image really is. My master TIF file can handle extremely large enlargements.

Image 11. Orange Tulip.

This tulip was part of an outdoor public garden. I had been photographing cityscapes with a moderate telephoto lens when I came across this flower. Normally I would use a macro lens for this subject. Rather than pass up the chance to photograph this perfectly symmetrical sample of a tulip, I decided to try capturing it with the lens I had. I positioned the camera on my tripod straight down directly over the flower because I didn’t want to produce a skewed view of the flower. At ISO 100 on that sunny day, I needed to close the aperture down to f/14 for a proper exposure.

Image 12. Orange Tulip - close-up.

The extremely fine ISO of 100 produced a very sharp and smooth image that enables me to create artistic compositions of the inner aspects of the tulip.

Image 13. Yellow Tulip.

Years before I took the previous image, I had photographed this tulip in my yard with a point-and-shoot camera, hand-held. ISO was set at 200 and an aperture of f/4 enabled a relatively fast shutter speed of 1/160 second. The result is a very sharp image that shows off the silky texture of the flower petals and renders the pistil and stamens very sharply.

Image 14. Yellow Tulip - close-up.

Even with a point-and-shoot image, when a subject is exposed correctly, artistic close-up compositions can be successful, as this cropped sample of the previous image shows. Utilize the camera you have to the best of its ability.

Image 15. Chrysanthemum – top view.

With cut flowers in the house, I spent time trying to create an interesting composition. After taking numerous exposures of various flowers, I concentrated on this colorful mum, surrounded by white daisies. Unlike the two previous flower exposures, this flower loses much of its detail in an overhead shot. Therefore, I tried a side view pose, as seen in the next image.

Image 16. Same Chrysanthemum – Side view.

Here, I wanted the viewer to see the multi-colored rows of the parts of this flower. This is the same flower seen in the previous image. Yet, the delicate parts of the flower were lost in the previous pose. The flower is about 6 inches across, making it a challenge to get it all in focus in a side view. Therefore, I used my tilt-shift lens. I slanted the lens to match the angle of the flower In order to increase the depth of field. In addition, I set the aperture to f/25 to further maximize depth of field.

Image 17. Chrysanthemum - close-up.

This is one of many possible close-up composition of the previous image. This composition gives the viewer a truly close-up view of the pink and yellow parts of the flower. In this cropped version, I felt that I wanted to include the texture of the outer petals, but I thought it was not necessary to include both sides of the flower. The result is lopsided and somewhat unsettling. Perhaps a balanced composition would be better. I leave it to you the reader to try your hand at different floral compositions!

Image 18. Red Tulip.

For this tulip, I used a macro lens to concentrate on the pistil and stamens, while still including enough of the silky petals to provide context. I set the aperture to f/11 in order to have enough depth of field.

Image 19. Flowerbeds.

During your visits to gardens, be sure to look for total garden photo opportunities. This full view shot was taken with a 20mm wide-angle lens. I set the camera on a tripod right up to the foreground flowers. I wanted to include detail and texture in the foreground flowers while still providing a sense of never-ending floral delight in the overall image. The curved flowerbed in the background draws your eye to from the back to the foreground of the image.

Image 20. Red Flower.

Flowers and plants with varied interesting shapes create endless imaging possibilities.

Image 21. Cholla Cacti At Sunrise.

As I drove into the Borrego Desert, the sun rose, so I stopped at a turnoff and took out my camera and tripod. Using a 35mm wide angle lens, I set ISO to 100 and aperture to f/4. The needles of a cactus are classic subjects for backlit images. You can see the sunlight coming from the upper left edge of the frame. In this original composition, the expansive desert area with mountains in the background create a solitary feeling.

Image 22. Cholla – close-up.

Isolating the cactus by cropping the previous image, creates a very different feeling for the viewer. The viewer concentrates on the lit-up nature of the needles along the edges of the plant.

Image 23. Cholla Needles Backlit.

Cropping he previous image even further makes the statement in an even more pronounced way.

Image 24. Red Berries.

Along with flowers, fruit also make interesting subjects. To capture the glowing red texture of these berries, I set the ISO of my camera on a tripod to 100 in order to maximize the smoothness of the subject. I set the aperture to f/8 to provide enough depth of field to keep the berry cluster sharp.

Chapter 2. At The Aquarium

Image 25. Tiger Shark.

Most exhibits at aquariums are best photographed using a normal lens, a medium wide angle lens, or a macro lens. Essentially, you use the same equipment as with florals. Aquarium photography is a little more demanding than florals because 1) you're photographing through glass, 2) there is usually low light conditions, and, 3) unlike flowers, aquatic animals move around. Nonetheless, with determined practice you can leverage your experience to create successful aquarium images.

I captured this head-on image of a tiger shark using a 35mm lens. I needed an ISO of 10,000. The camera calculated a shutter speed of 1/400 second for a proper exposure. I spent about 15 minutes watching the behavior and movements of the sharks and waited patiently until a worthy composition presented itself. The s-curve of the shark's body creates a classic artistic element of visual flow and interest.

Image 26. Clownfish.

Fortunately, this exhibit was well lit. I used a macro lens. An ISO of 160 enabled proper exposure, thus reducing noise. The clownfish swam by from one side to another over a 20 minute period. Then he settled into the anemone in this portrait pose which creates a more intimate eye contact composition.

Image 27. Lionfish.

I had my macro lens for this image also. I needed to set the ISO to 6400 for this exhibit. I made numerous test shots to determine that a shutter speed of 1/160 second was adequate to take a sharp image of these constantly active fish. As with many other sea creatures, the lionfish in the tank were swimming mostly from side to side. It took about 30 minutes until I could get a clear shot of a straight-on portrait.

Image 28. Yellow Seahorse.

Although it looks like this seahorse stopped to pose for me, in reality it was constantly floating up and down and around. I was able to set the ISO to 160 because I was willing to take a chance and have a wide-open shutter at a f/2.8 setting. Even though that restricts you to a narrow depth of field, the depth of field was deep enough with my 35mm lens, although it would not have been with my 60mm macro lens. The purple tendril plants on either side of the seahorse adds an other-worldly interest to the image.

Image 29. Green Seahorse.

A green seahorse against a green background is usually not a recipe for success. However, unlike the previous seahorse image for which I used a wide angle lens, I used a 60mm macro lens for this image, which made the background very soft. The sharpness that I achieved for this image provides extra compositional possibilities, as seen in a cropped version that I present as the next image.

Image 30. Green Seahorse – close-up of image 29.

The delicate detail of the facial structure is the element of interest in this cropped close-up. The lines that radiate from his eye glisten under the aquarium light.

Image 31. Dolphin.

This is another example where the animal looks as if it posed and waited. In actual fact, he maintained this pose for only 5 seconds. I captured this image with a point-and-shoot zoom camera. I set ISO to 200 and created a moderately successful image with a 1/30 second exposure. A truly sharp professional image would require an underwater approach. But, as relaxed spectator photos go, this is a notch above ordinary.

Image 32. Jellyfish.

Lighting for this jellyfish tank was bright enough for me to set the camera to ISO 500. With a shutter speed set at 1/400 second, the camera set the aperture to f/2.8.

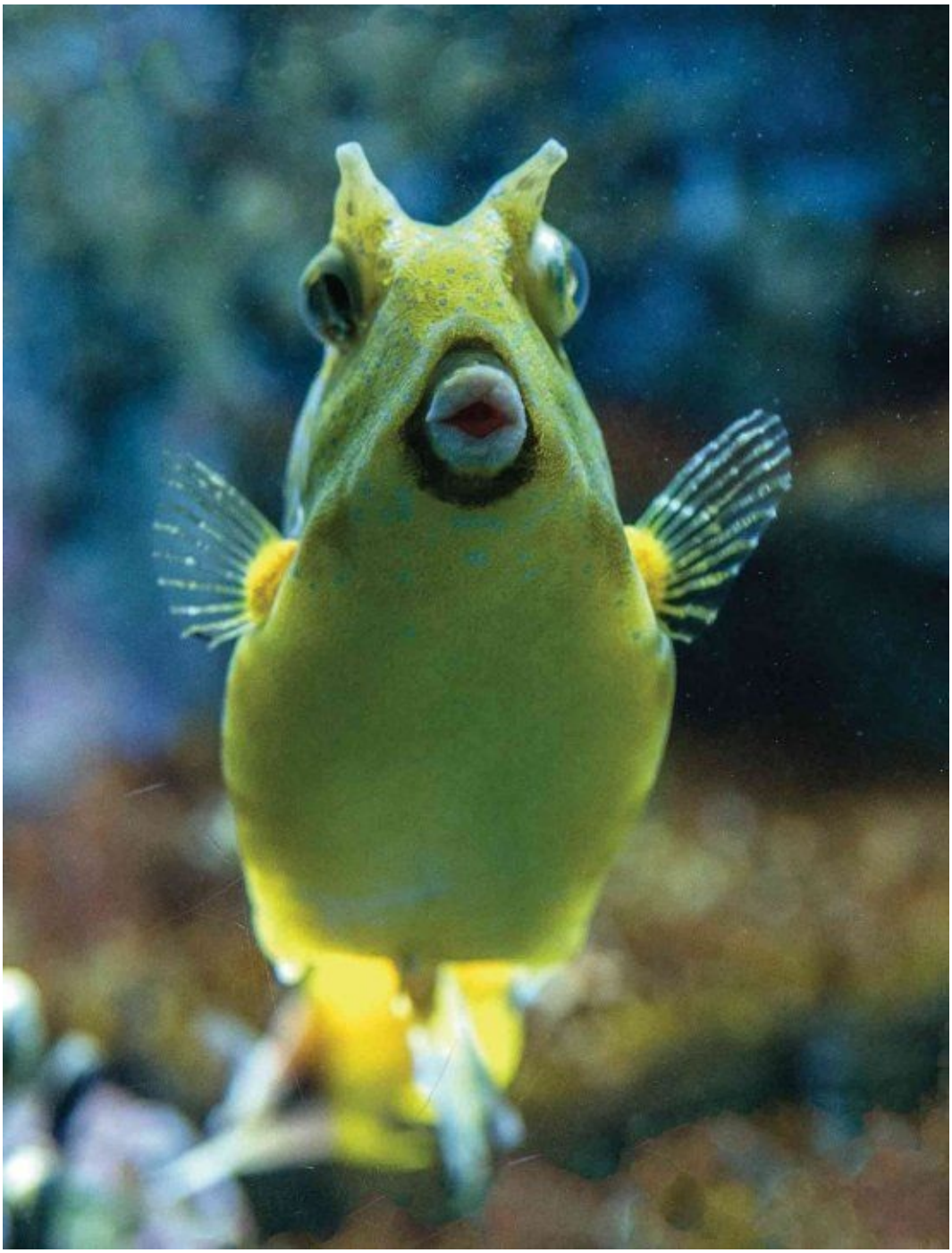
Image 33. Peacock Mantis Shrimp.

The multi-colored peacock mantis shrimp makes an interesting subject. But it likes a dark environment. I had to set the ISO to a high value of 12,800. The shrimp was moving its arms and eyes, but otherwise was moderately still for about 30 seconds. A shutter speed of 1/80 second was able to produce a moderately sharp image.

Image 34. Octopus.

Even with a 35mm wide angle lens, it is difficult to get an entire crawling octopus in focus. I concentrated on the eye, which you can see just behind and to the left of the tentacle in the middle of the image. ISO 9,000, f/2.8 aperture, at 1/100 second shutter speed.

Image 35. Longhorn Cowfish



Similar to the lionfish and clown fish, I had to wait a long time before this longhorn cowfish faced me. Although the tank light is bright, the fish is in front of the light so that he is in his own shadow. I had to set the ISO to 8,000. A 1/200 second shutter speed enabled me to catch this fleeting moment as the fish swam by.

Chapter 3. Landscapes

Image 36. Mount Moran In Grand Tetons

Many beautiful landscapes can be successfully photographed with normal or moderately wide angle lenses. Some vistas call for an ultra-wide angle lens to do them justice. Quality ultra-wide angle lenses can get somewhat expensive. What is even more expensive is the cost of travel and lodging at scenic locations.

After I had been to two national parks and taken nice pictures of spectacular scenery, I realized that my images, although successful in terms of composition, sharpness, and color saturation, could not be enlarged to the point that did justice to the magnificent beauty they portrayed. Any normal person would be satisfied with purchasing a coffee table book of landscape images. But people who have the photographer’s itch insist on creating their own images. Thus, for nature lovers who vacation at national parks, etc., the cost of quality camera equipment is relatively small – and is really part of the cost of the travel and vacation.

This increased cost – of travel, lodging, and perhaps, equipment - is why I place the chapter on landscapes after florals and aquarium photography. Although wide angle lenses can produce sharp results even when hand-held, I use a tripod because sunrise and sunset provide the most exciting light for landscapes. At these periods of day, the light is subdued. To produce smooth images, a low ISO is needed. This causes the proper shutter speed to be long (slow), sometimes to as long as 1 or 2 seconds.

This image taken at dawn required a 1/10 second shutter speed at ISO 100. Having and using a tripod is certainly worth it when I get up before dawn and wait for the light to be just right to create a serene captivating image.

Image 37. Yosemite Tunnel View Lookout.

In this image, looking from left to right, we see El Capitan, Half dome, and the Three Brothers formation. A 70mm lens includes all three of these iconic structures of Yosemite. The settings were ISO 1250, f/20, at 1/80 second. Although I could have set the ISO to a lower value, I found that this exposure produced the best overall result of both the darker formations and the lighter areas.

Image 38. Imperial Point at the North Rim Of Grand Canyon.

Although most of my images of the Grand Canyon were taken with wide-angle lenses, I took this vista with a 100mm lens because it produced a more detailed and exciting composition, both in the foreground and the background. At ISO 100, a shutter speed of 1/640 second exposed the scene at f/16.

Something to consider for vistas that span a great length, is to take multiple images side-by-side and stitch them together to create a panorama, although I did not feel it was necessary for this subject.

Image 39. South Rim Of Grand Canyon

A 14mm ultra-wide angle lens enabled me to capture enough of the expanse of what is visually a somewhat tight space. Most of the formations are in shadow, so I set the ISO to 200, rather than 100. The shaft of sunlight on the farther formation creates a point of interest toward the center of the image. The striation lines in the rocks draw the eye toward that central area of light. Note how the striations of the rock in the lower right corner of the image point diagonally toward the center of the image, thus reinforces the viewer’s eye movement.

Image 40. Appalachian Mountains From Shenandoah National Park

Here is an example of making the best of suboptimal conditions. My entire 4-day stay in Shenandoah National Park in the spring was misty and foggy. Of all the scenic lookout vistas, this was the only one that I could squeeze a little interest out of. There were just enough clouds during sundown to create some red in the sky over rows and rows of the Appalachian mountains in the distance.

Image 41. Palm Surrounded By Arnica Flowers In Borrego Desert

The wisps of cirrus clouds that create a turbulent looking sky provide a dynamic feeling to this image of an oasis in the desert. The yellow arnica flowers around the palm also help to create a dynamic frame. One challenge in creating landscape images is providing detail in foreground flowers. For an image to be truly successful, the foreground flowers need to be more than just splashes of color. In this image you can see the petals and center of the foreground flowers. As an added element of interest, the distant hills give the image a feeling of depth.

Image 42. Yellowstone Morning Glory Hot Spring

The trick with the beautiful morning glory hot spring is to capture the vibrant yellows, oranges, and greens of the entire spring. I utilized a 17mm wide angle lens. With ISO set to 100, and an aperture of f/13 to increase depth of field, a shutter speed of 1/100 second produced a perfect exposure on that sunny day.

Chapter 4. Sunrise/Sunset

Image 43. Sunset Near Tree

Having the sun in an image introduces unique difficulties. Typically, direct light from the sun will destroy all detail in a photo. Ways to avoid this from happening are to wait for a day when there are clouds to tone down the light of the sun, and/or add a filter such as a polarizer, neutral density, or graduated neutral density filter.

In this image there was enough cloud cover to mute the sunlight, yet allow the disk of the sun to be a distinct visual element in the image. I used a 70mm lens with ISO set to 200. Camera was set in program mode so that the camera selected the aperture/shutter combination of f/8 and 1/250 second shutter speed.

Image 44. Ocean Sunset

On most evenings, sunset over the ocean is a cloudless experience, which makes it very difficult to produce a well-exposed image. But even well-exposed images of a featureless scene will not be successful. In this image there are enough clouds to create orange color along the horizon. The reflection of the sun in the ocean adds interest.

Different exposures will produce different results. White balance is another camera settings, which can produce different moods in the image. For this sunset, taken with a 24mm lens, I tried many different settings and reviewed my images to select the successful one. In the end, auto white balance, at ISO100 in shutter priority at 1/30 second produced a successful result. Naturally, I used a tripod. The next image is actually this very image with its tone manipulated.

Image 45. Auto-Toned Ocean Sunset

This is the same as the previous image with one simple post-processing function applied to it. Some image manipulation software applications have an “Auto Tone” function. I applied that to the previous image and the result is a brighter, happier image. I personally prefer the original tone because it conveys the scene as it actually took place. But you as the photographer and artist can make use of all the tools at your disposal to achieve the look and feel you want to communicate.

Image 46. Palm Stand Sunrise.

During this dawn, I again tried different settings and reviewed my images to select the exposure that produced the right mood and feeling of the scene as I had experienced it. A 60mm lens with camera mounted on a tripod enabled me to include all the palms. Auto white balance produced the best color balance. I set ISO to 100. Although the image gives you the impression that there was lots of light during this dawn, in actuality, the sky was still very dark. Therefore, I set the camera in aperture priority mode with aperture set at the widest opening, f/2.8. The camera calculated a shutter speed of 1/160 second. The result is an image that communicates a feeling of the hope of a new day.

Image 47. Clouds At Twilight

At times, clouds are the subject, as I feel they are in this twilight setting. Layers of clouds create a sweeping motion all their own that draws the eye ever upward.

Image 48. Full Moon

Although a telephoto lens is not a telescope, you can achieve successful images of the moon with a 400mm lens. Try numerous settings until you are able to see the features of the moon. Focusing may be a challenge. Therefore, once you have a successful ISO-aperture-shutter speed combination, try slightly different focus settings. Just as you can bracket exposure, you can bracket focus.

This capture was at ISO 100 and shutter priority at 1/800 second. The camera selected an aperture of f/2.8. Keep in mind that because the earth is constantly rotating, a longer (slower) shutter speed will result in a certain amount of blur.

In this image, the moon is aglow. But that reduces detail. For instance, in the lower right quadrant of the moon, there is a bright circle from which lines radiate. This spot is where an asteroid hit the moon and dust radiated out in all directions. That central spot is actually a crater, although the brightness of it in this image hides that fact.

Another bright spot to note is just left of the center of the moon as seen in this image. The next image will show that this bright spot is also a crater with dust lines radiating from it.

Image 49. Moon At 12 Days Of The Lunar Cycle

The previous image of a full moon shows all the “seas” on the moon. However, I found that photographing phases of the moon brings out more crater detail along the darkened edge. Note that the overall tone of the moon is subdued compared to the previous image.

Note also that the bright spot that was to the left of the center of the moon in the previous image is now close to the edge of the shadow, in the upper quadrant of the image. The improved detail allows you to see that there are some radiating lines of dust as the result of am asteroid strike.

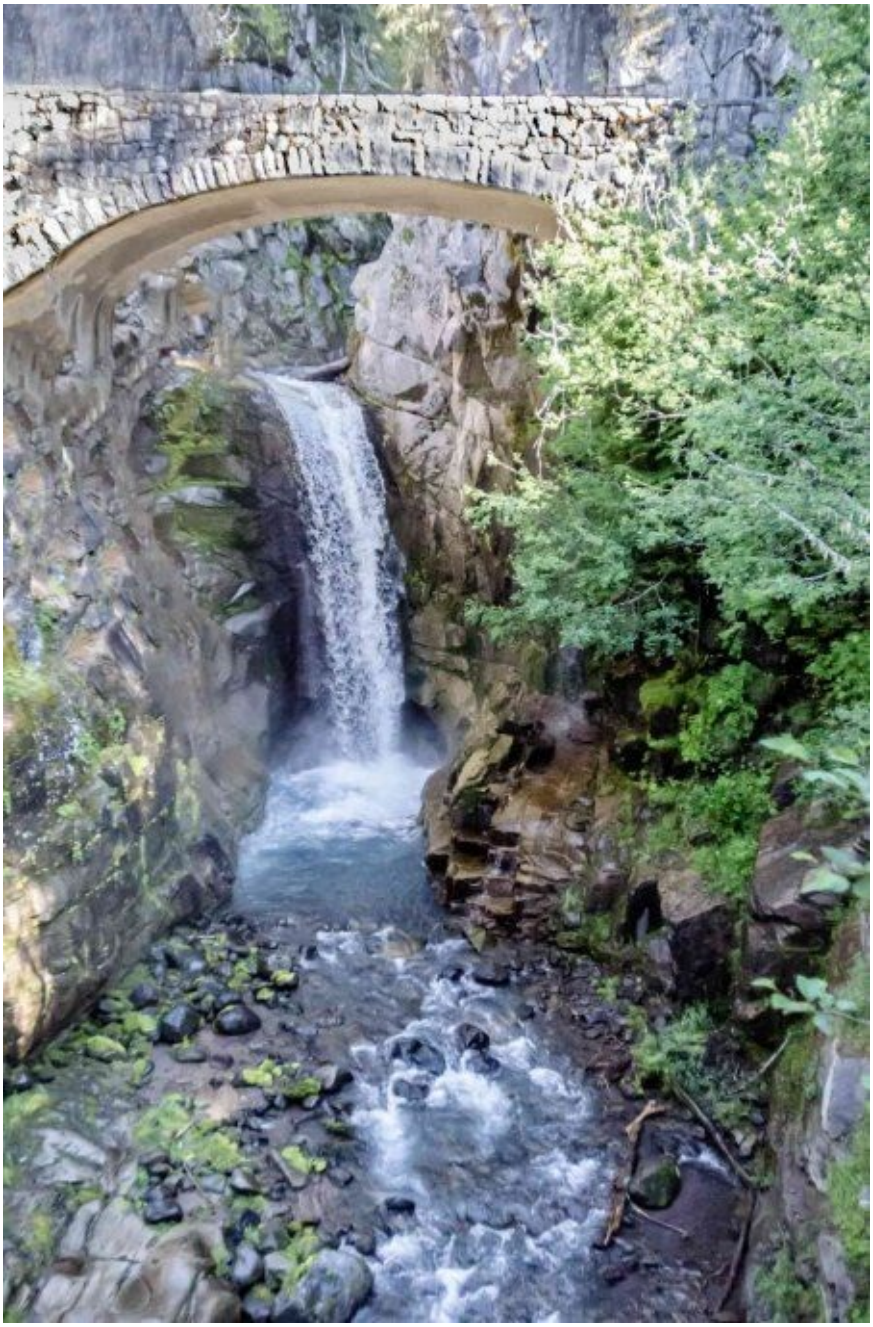
This image was taken at ISO 100, manual mode, 1/160 second with aperture f/6.

Image 50. Quarter Moon

There are even more craters visible is this phase of the moon on night 7 of the lunar cycle. Also note that the tone of the moon is midway between the two previous images.

Chapter 5. Waterfalls

Image 51. Christine Falls In Mt. Rainier National Park



Tall subjects, such as waterfalls present the challenge of getting the entire subject into the frame. I personally prefer a wide image orientation because it is more like our natural binocular vision. But for this waterfall, I had to rotate the camera to a tall orientation even when using a wide-angle lens. Although it was a sunny day, most of this setting was in shade. Therefore, I needed to set the ISO to 1400. I prefer to see water droplets when I photograph moving water. Therefore, I set the mode to shutter priority with a speed of 1/2000 second. The camera set the aperture to f/2.8.

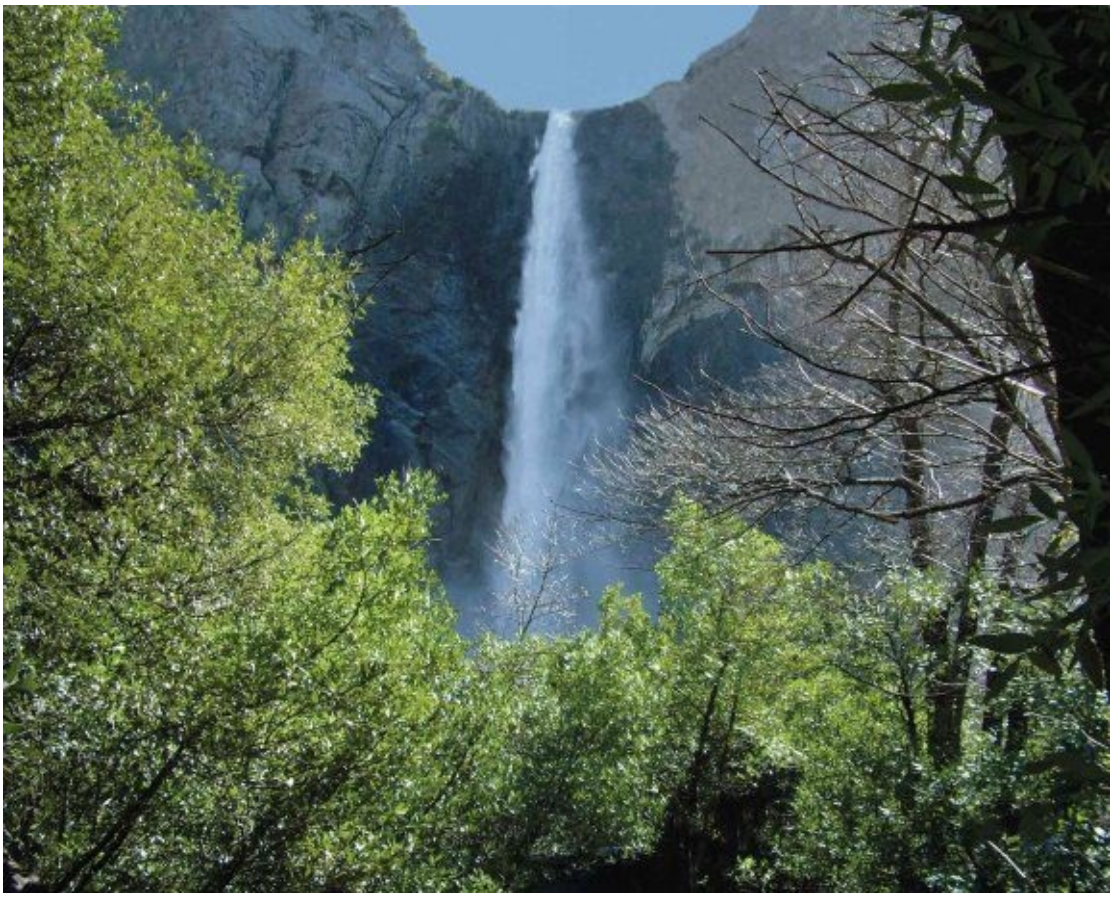
Image 52. Myrtle Falls In Mt. Rainier National Pa

Mt. Rainier displays its splendor when it is not covered by clouds. Unfortunately, that was not the case in this image. However, the waterfall in the foreground made this a compelling subject. At ISO 800, I was able to get a sense of falling water with a 1/3200 second exposure.

Image 53. Dark Hollow Falls In Shenandoah National Park

I captured this tiered waterfall with my cell phone. Most professional nature photographers today prefer to expose waterfalls and flowing water with very long shutter speeds in order to make the water look like silk. Personally, I feel that approach loses the droplet quality which gives the viewer a feeling of dynamic flow. I saved the original jpg file into a tif file which has a 42 MB file size.

Image 54. Bridal Veil Falls In Yosemite National Park



The power of very tall waterfalls is such that its waters flow very fast. An advantage of Bridal Veil falls in Yosemite is that there are vantage points far enough away that you can photograph it in all its splendor at reasonable camera settings. With a 35mm lens and a shutter speed of 1/500 second, I was able to capture the power of the falls surrounded by the grandeur of the landscape.

Image 55. American Falls and Bridal Veil Falls At Niagara Falls

Among the many iconic waterfalls easily accessible to tourists in North America, Niagara Falls ranks among the most popular and most photographed. This image of the American Falls was taken while on the Maid of the Mist boat. I used a 24mm lens at 1/1250 second exposure. The combination of the roaring action of the mighty white waterfall and the mist of the falling water as it slams onto the surface of the Niagara River, with the calm reflection of the falls in the river create a sense of natural wonder.

Chapter 6. Butterflies

Image 56. Monarch Butterfly arched Over Flower.

Butterflies are constantly moving. They stay on a flower only for a few seconds. In order to have a 1/250 second shutter speed for this image, I set the ISO to 400. As for most of these butterfly images, I used a close-up (macro) lens for this capture. However, many of my successful butterfly images were taken with a point-and-shoot zoom camera, as will be noted.

My general experience is that in butterfly houses and gardens, I can make use of a close-up lens (or point-and-shoot zoom camera). Outside in open spaces, I cannot get close-enough to the subject to get a large enough image with a close-up lens. Usually use a 60mm or 100mm close-up. My butterfly images taken outdoors are usually either with a point-and-shoot zoom camera or a telephoto lens.

Image 57. Birdwing Butterflies Mating.

At a butterfly garden, I found this birdwing pair mating. Their prolonged pose allowed a 1/60 second exposure. Note that the female is holding onto a leaf while the male’s legs are dangling. Also take note that the female has an inner row of spots on her wing, which the male does not. Again, I used a close-up lens.

Image 58. Longwing On Flower.

This is a South American species of butterfly which I photographed at a butterfly house. This butterfly held this pose for more than a few seconds so I was able to capture this at 1/100 second. This image was also taken with a close-up lens.

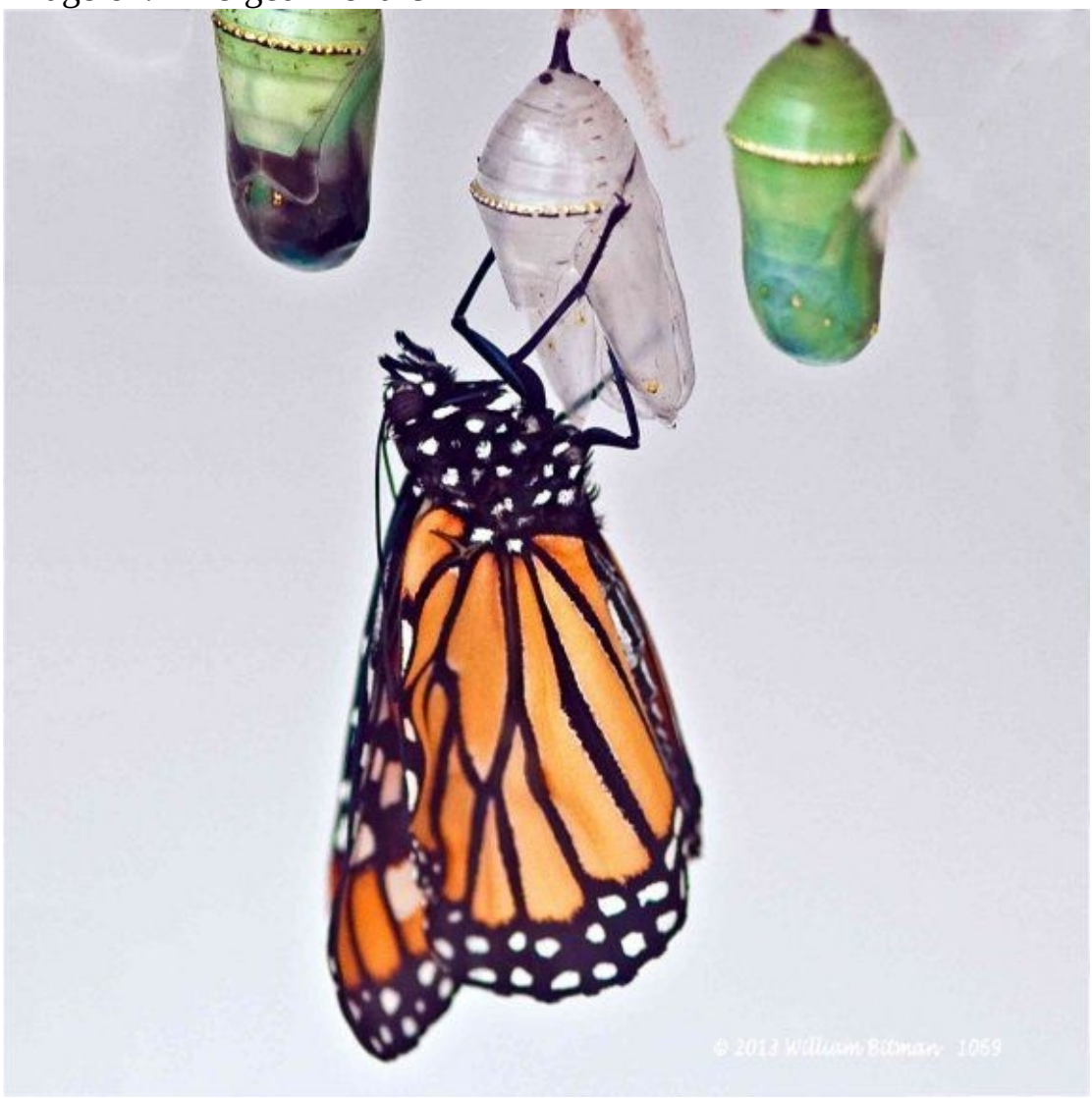
Image 59. Variegated Fritillary – original capture.

While I was taking a walk, this variegated fritillary alighted on a flower. I had only a point-and-shoot zoom camera, but I felt it was worth trying to get an image of her. When I walked toward her, she fluttered away to another location. I walked over to her and again she flew a few feet over – this time onto the pebbled asphalt road. The butterfly felt that she was safely camouflaged so that I was able to take this picture with a 1/90 second exposure.

Image 60. Variegated Fritillary – close-up.

The resolution of the previous image is so good that the texture created by the scales of the butterfly create their own visual interest. Therefore, I composed this version of the image that retains the feeling of camouflage yet enables you to see the texture of the wings.

Image 61. Emerged Monarch



Butterfly gardens provide unique experiences, such as this newly emerged monarch, along with cocoons still maturing. Close-up lens at 1/125 second.

Image 62. Blue Morpho.

The constantly fluttering Blue Morpho butterfly is difficult to capture as a sharp image. I used a close-up lens and set the shutter speed to 1/400 second to capture the split second that this butterfly stayed in one place.

Image 63. Sulfur Butterfly.

Although not always colorful, many local butterflies are worth pursuing. For instance, I never realized that these plain local butterflies have green eyes. Pleasant surprises abound all around you. During a casual nature walk I had a telephoto lens on my camera and was able to capture this image at 1/800 second.

Image 64. Spicebush Butterfly.

This beautifully colorful butterfly was photographed at an indoor butterfly garden with a point-and-shoot zoom camera set at 1/60 second.

Image 65. Yellow Swallowtail – original capture.

My camera was set up for hummingbird sightings. I set up my telephoto lens on a tripod 15 feet away from this flowering plant. It was a sunny day so that even though I set the shutter speed to a very fast 1/2000 second (in case a hummingbird came by), I could set the ISO to 500 and still produce a good exposure.

Image 66. Yellow Swallowtail – close-up.

As with my experience with the variegated fritillary a few images previously, the detail is so good in the previous image, even at only 16 MP, that a cropped image of the subject produces a pleasing composition.

Image 67. Black Swallowtail.

This backyard butterfly captured with a point-and-shoot zoom camera has enough resolution to allow for this close-cropped composition.

Chapter 7. Young Wildlife

Image 68. Chicks In Nest.

This nest was at eye level in my neighbor’s tree. With almost nothing other than the open beaks waiting for their parent to bring food, along with just a single eye to add “human” interest, this image communicates the highly focused world of babies.

Image 69. Western Gull Chick.

I was fortunate to have access to an area where gulls nest. I stayed my distance by using an ultra-telephoto lens. This very young gull chick was learning to walk. As he held his wings out to balance himself, his raised leg gives an impression of dancing.

Image 70. Canada Goose Gosling.

There is a lake with a protected area for wildlife just a mile from my home. One disadvantage to this site is that you must view the wildlife from a high vantage point. This creates an unwanted aloofness in images. In addition, my best capture of a young Canada goose was on a very bright day which creates blown-out highlights and extreme contrast. Nonetheless, this image's redeeming value is the face-to-face pose. I hope to capture a technically better image of this type of subject someday. But for now I keep this image as my best so far. Photography is a journey.

Image 71. Prairie Dog Pup.

This image benefits from the level point of view between the subject and camera. A shutter speed of 1/640 second enabled me to produce a sharp image of these fast moving young prairie dogs, Also, an f/8 aperture keeps the entire subject in focus.

Image 72. Baby Koala Asleep.

The fact that koalas sleep for 22 hours each day is usually a disadvantage to photographers. But this sleeping joey, with his tongue out just slightly and his claws curled makes this image endearing.

Image 73. Pygmy Goat Kid Galloping.

Although it is great to make a successful image of a stationary animal, it is always preferable and more exciting to be able to capture a moment of action.

Image 74. Pygmy Goat Kid Portrait – as captured.

A straight portrait can also be effective in conveying the characteristics of your subject. This image easily supports a cropped version, as seen in the next image.

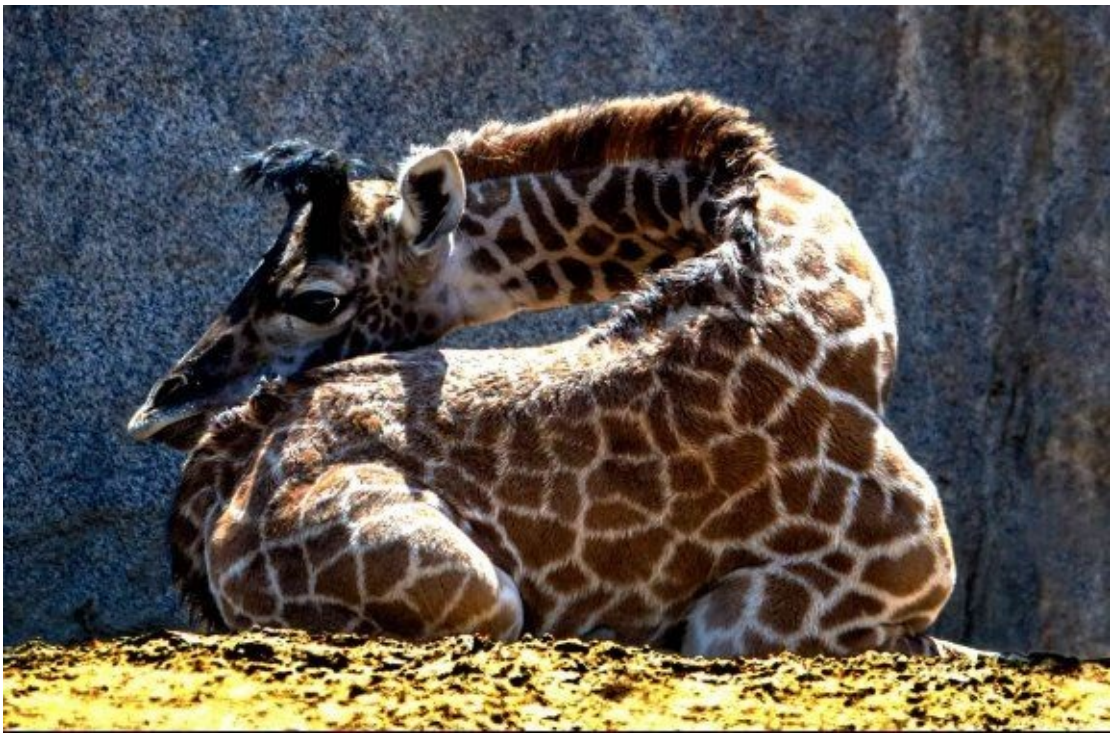
Image 75. Pygmy Goat Kid Portrait – close-up.

This is a cropped composition of the previous image. The expressive eyes deserve our attention.

Image 76. Baby Giraffe Resting His Head On His Knee 1.

Young giraffes have an intriguing way to rest their head on their knee which is at the same time both awkward and elegant. When I saw this a few years ago, I was extremely far away from the giraffe, but I had a 400mm lens. Nonetheless, my camera settings were not optimal for this subject. The TIF file is very small at about 5 MB. Yet the image is so compelling, I decided to apply interpolation algorithm to create a TIF file that is 50 MB.

Image 77. Another Baby Giraffe Resting His Head On His Knee



Years later, when I spotted a 10 day old giraffe posing the same way, I was closer and set my camera appropriately. Yet I keep the older image because the grace which the previous giraffe displayed just is not present in this image. Also, the bright sunlight created many areas of blown-out highlights, which makes it a little unpleasant to look at. It is amazing how difficult it is to “go back in time” to recreate a prized image with better technique and better equipment.

Image 78. Baby Giraffe Portrait.

I thought that a portrait of a baby giraffe with his mother’s reticulated skin as a background would make a compelling image. In actual fact, the shadows are too harsh and somehow the connection between the baby and mother doesn’t come through. But I will keep trying to find a way to successfully communicate this.

Image 79. Tiger Cub.

The success rate for captive wildlife images greatly increases when you know the timing of special events. For instance, every day at a certain time, a certain zoo gives treats to its tigers. Being there an hour earlier in order to get a prime viewing spot and set up your equipment is imperative. In this image, the tiger cub had just finished eating her treat and was licking her paws. I captured many moments during this session, but I like this one split second when she did not have her tongue out. As with many of my wildlife portraits and profiles, it looks as if the animal stopped and posed, when in fact I needed to act quickly to capture this fleeting moment.

Image 80. Tiger Cub Walking.

On this sunny and hot morning, the mother and her cubs were resting in the shade 50 feet below the viewing area of this exhibit. A nice thing about young animals is that they are curious and have lots of energy. After about 2 hours, this cub suddenly walked toward me and then looked up at me. I quickly managed to get a shot of her head and paw. By the time I tried to reposition my lens, she was gone. I would have liked to have included more body of the animal in the photo, but the direct eye contact compels me to keep this image.

Image 81. Jaguar Cub Walking.

My camera was set to shutter priority at 1/1000 second to try to capture this fast moving jaguar cub. After he ran from place to place all over his enclosure, I was fortunate to be able to get this portrait shot. Because he was in the heavy shade of the trees, my camera set the aperture to f/2.8. Fortunately, the depth of field was enough to have the entire animal in reasonable focus. Although he was only 3 months old, the way he bares his teeth conveys how dangerous he can be.

Image 82. Jaguar Cub Against Tree.

Contrast the previous pose with how innocent he looks snuggling up against the tree.

Image 83. Lion Cub Lying On His Mother’s Paw

I set my camera to shutter priority at 1/1000 second and an ISO of 1000. The camera selected an f/4 aperture. I was able to get direct eye contact during this fleeting moment as the lion cub played with her mother.

Image 84. Lion Cub Portrait

Rambunctious young lion cubs are constantly running and jumping. This is another example of capturing what looks like a calm posed moment. Shutter priority at 1/800 second, ISO 2000, f/4.

Image 85. Lion Cub Baring His Teeth

This is a different and interesting pose. The next image is a crop emphasizing her sharp teeth.

Image 86. Lion Cub Baring His Teeth – close-up

This is a cropped close up of the previous image. Compare this to a similar pose of an adult lion in chapter 11.

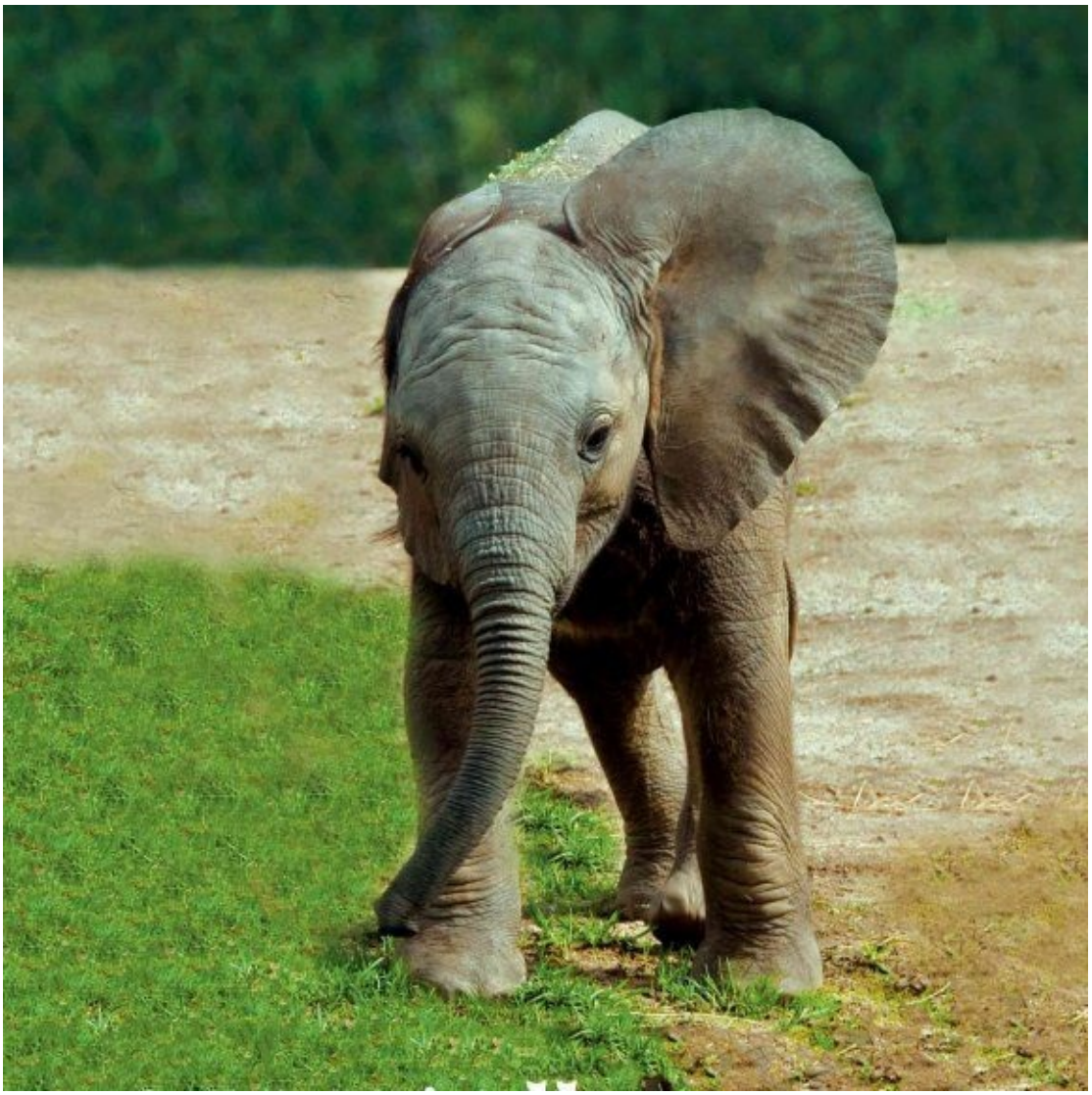
Image 87. Gorilla Cub Portrait

This gorilla cub was young enough to be amused by zoo visitors. I was able to capture the glistening of his eyes in the sunlight. ISO 200, aperture priority at f/4, 1/640 second exposure.

Image 88. Gorilla Cub Standing

This image captures a certain expressiveness in his eyes, mouth, stance, and hand motions.

Image 89. African Elephant Calf



This image captures the innocence of a young elephant. The direct portrait pose is better than just a side view.

Chapter 8. Wildlife Mothers and Babies

Image 90. Western Gull Feeding Her Chick

Taking advantage of my access to a gull nesting area, I was able to catch this moment where the chick is expectantly waiting for a morsel of regurgitated fish from his mother. ISO 900, shutter priority at 1/6400 second, camera selecting a f/2.8 aperture.

Image 91. Western Gull Chick Following In His Mother’s Footsteps

This is a tender moment where a young chick is lifting his left foot in sync with his mother. ISO 200, aperture priority at f/8, camera selecting 1/250 second exposure.

Image 92. Yellow Crowned Crane Feeding Her Chick

This situation had everything going against it and the results are mediocre at best. The lens I had with me was too long to get the mother bird in the frame. The sun was so bright that high contrast overwhelms the image. But, it does show some important aspects of the mother bird and the relationship between mother and child. So it’s almost a notch above ordinary.

Image 93. Canada Goose Swimming With Her Goslings

This image suffers from the fact that I was not able to get eye level with the subjects. To make things worse, the strong sunlight creates highlights and dark shadows. But the gosling swimming ahead of the mother gives the image a certain amount of sweetness, Also, the fact that the trailing goslings are aligned in a curve, making each visible separately, makes this image almost a notch above ordinary.

Image 94. Starling Feeding Her Chick

Catching the moment a mother bird places her beak with food into her chick’s beak is a recipe for success. But again, the harsh sunlight makes it difficult to see texture and detail in the birds. And the background is very busy and distracting.

Image 95. Prairie Dog And Her Pup

Finally, a mother/son image whose flaws are fairly minimal. Never stop critiquing your images and keep photographing until you have just the right pose under soft daylight.

Image 96. Baby Gorilla Held By His Mother

This 4 month old gorilla is still sucking his finders. A key to successful wildlife imaging is to keep tabs with your local zoo and find out what exhibits have young animals. Maximize your opportunity by going directly to the most interesting exhibit and spending as much time there as necessary to capture a satisfying image.

Image 97. Gorilla Mother And Son

The eyes, especially of the baby gorilla, provide extra interest in this capture of a mother and son’s quiet moment together. A challenge with gorilla images is that the fur can be very dark. I make changes to shadows, brightness, and contrast to bring out fur texture without damaging the rest of the image.

Image 98. Baby Monkey Riding On Back Of His Mother

Although the mother and baby are not looking at each other, the (almost) direct eye contact helps this image to succeed to an extent.

Image 99. Look Into My Eyes

This loving look between mother and child Coquerel Sifaka (pronounced: shifak) is a special moment captured at 1/1000 second. This indoor exhibit is poorly lit. Therefore I had to set the ISO to 10,000, which required a very wide f/2.8 aperture.

Image 100. Andean Speckled Bear And Her Cub

Just as with gorillas, the black fur of these bears require perfect exposure as well as manipulation of shadows, brightness, and contrast in post processing. It is a balancing act because you also have to keep the white skin looking natural. Fortunately, this was a bright but somewhat overcast day – perfect lighting for nature photography. This image was taken at ISO 800, shutter priority at 1/500 second which caused an f/5 aperture.

Image 101. Elephant Calf Walking Under His Mother

Needless to say, this is one of the few truly successful images in my portfolio. The secret is to keep up with the news of your local zoo and continue to visit the most promising exhibits again and again until you capture a special moment.

Image 102. Elephant Caressing Her Son

This very tight composition was the accidental result of my not having the right lens for the occasion. But many people have told me that this composition concentrates the eye on the feeling of motherly love.

Image 103. Buffalo Nursing Her Calf

When I was at a national park, I came across a herd of buffalo. Just as in days of yore, you never know when a herd of buffalo will show up. Even the park rangers are surprised when they arrive. I set up my tripod and telephoto lens in order to keep a safe distance from these massive animals. After making numerous exposures of various members of the herd, I spotted this truly special moment.

Image 104. Seal Lon Kissing Her Cub

Parents teach their young sea ioon cubs to swim in shallow water which creates many good photo opportunities.

Image 105. Sheep And Her Lambs

This image of local sheep is interesting because their wool against the green grass is very striking and complementary. The direct eye contact and look of innocence of the lamb add to the charm of this image.

Image 106. Giraffe Nosing With Mom

This is another example where I would have liked to have had a less telephoto lens so I could get more of the mother giraffe. But again, this composition concentrates on the loving relationship between mother and child.

Image 107. Lioness Walking With Her Cub

In some ways this image is a companion to the elephant calf walking under his mom – image 101.

Image 108. Lioness And Her Cub: Staring Contest

This parent-child stand-off is one which any parent can relate to. Even though it was a sunny day, there were many shady areas in the exhibit. Therefore I had set the ISO to 1,000 and I set the camera to shutter priority at 1/800 second, as I quickly followed the action. An alternative technique would have been to set the exposure to manual, setting shutter to 1/800 and aperture to f/8. Then I could allow the camera to determine the appropriate ISO for a correct exposure.

Chapter 9. Cheetahs

Image 109. Cheetah Off All Four

More and more zoos that keep cheetahs schedule runs in areas where visitors can watch. It’s healthy for the cheetahs to get their exercise and it keeps visitor attendance high. To get this exciting image with all her four paws off the ground in mid-run, I set the exposure mode to shutter priority at 1/3200 second. I set the ISO to 640 so that the camera could set the aperture to f/5.

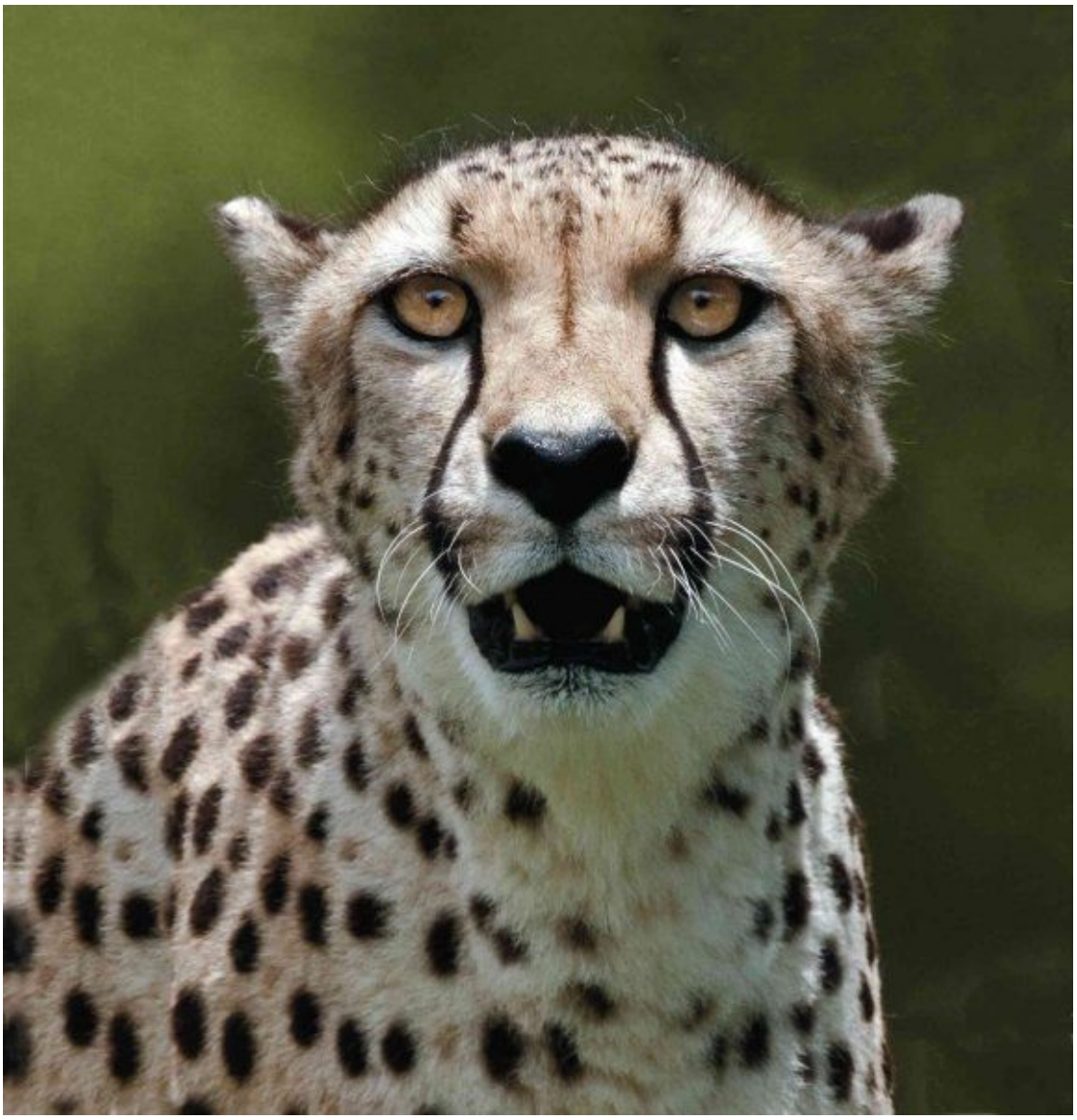
Because cheetahs run so fast, it is actually easier to get a head-on image rather then a profile side view (see image 121). I arrive at a prime location 2 hours early to get a good view. It is necessary to pan the camera as the cheetah runs toward you and it helps if your camera can capture bursts of at least 5 fps. It took many visits before I succeeded in producing good images.

In terms of this image, the strong shadow helps to give the viewer a sense of the cheetah being off the ground. However, the image has a large empty quadrant which produces an unbalanced composition which some people find objectionable. The next image is a crop that focuses on just the cheetah.

Image 110. Cropped Close-up Of Cheetah Running

This version of the previous image has the advantage of focusing our attention on the cheetah in all her glory.

Image 111. Cheetah Facial Portrait



Bright glistening eyes, a show of her canine teeth, and a feeling that she wasn’t just lounging around during this exposure, help make this an intriguing portrait.

Image 112. Cheetah Guarding Her Bone

The keeper gave each of the 3 cheetahs in this exhibit a bone. Here, this cheetah is snarling at her brother to keep him away from her prize.

Although I feel that the close up in this image is an opportunity to see the detail of a cheetah’s spots, most people feel uncomfortable viewing the backside of an animal. Therefore, I cropped the image to show just her upper body as seen in the next image.

Image 113. Close-up Of Previous Image

Image 114. Cheetah Facial Profile – Close-up of Previous Image

A further crop of the image results in a detailed facial profile, which has its own natural beauty.

Image 115. Cheetah Full Stature

This full body profile portrait as the cheetah walks provides an interesting portrait in action.

Image 116. Background Manipulation of Previous Image

This image is simply the previous image with post-processing applied to remove the leaves in the upper left corner. It is a small change but it gives the image greater impact due to the contrast created by the dark background.

Image 117. Cheetah Running With Front Paws Stretched Forward

This head-on image of the running cheetah catches her paws outstretched toward us. It was the same run as shown in image 109, made possible because of the high burst rate of the camera. The next image is a close up crop.

Image 118. Close-up of Previous Image.

This close up of the previous image uniquely shows exciting detail of the claws.

Image 119. Further Close-up of Image 117.

To further accentuate the claws, this is another possible cropping of the image. It has the advantage of being a somewhat square format rather than the tall format of the previous image. This extreme close up shows that the whiskers are not as sharp as in most of my other images of animals. At 1/3200 second shutter speed, the camera set the aperture to f/3.5 which doesn’t provide enough depth of field to get both the claws which are far forward, and the claws, in focus.

Image 120. Profile Of Cheetah Running

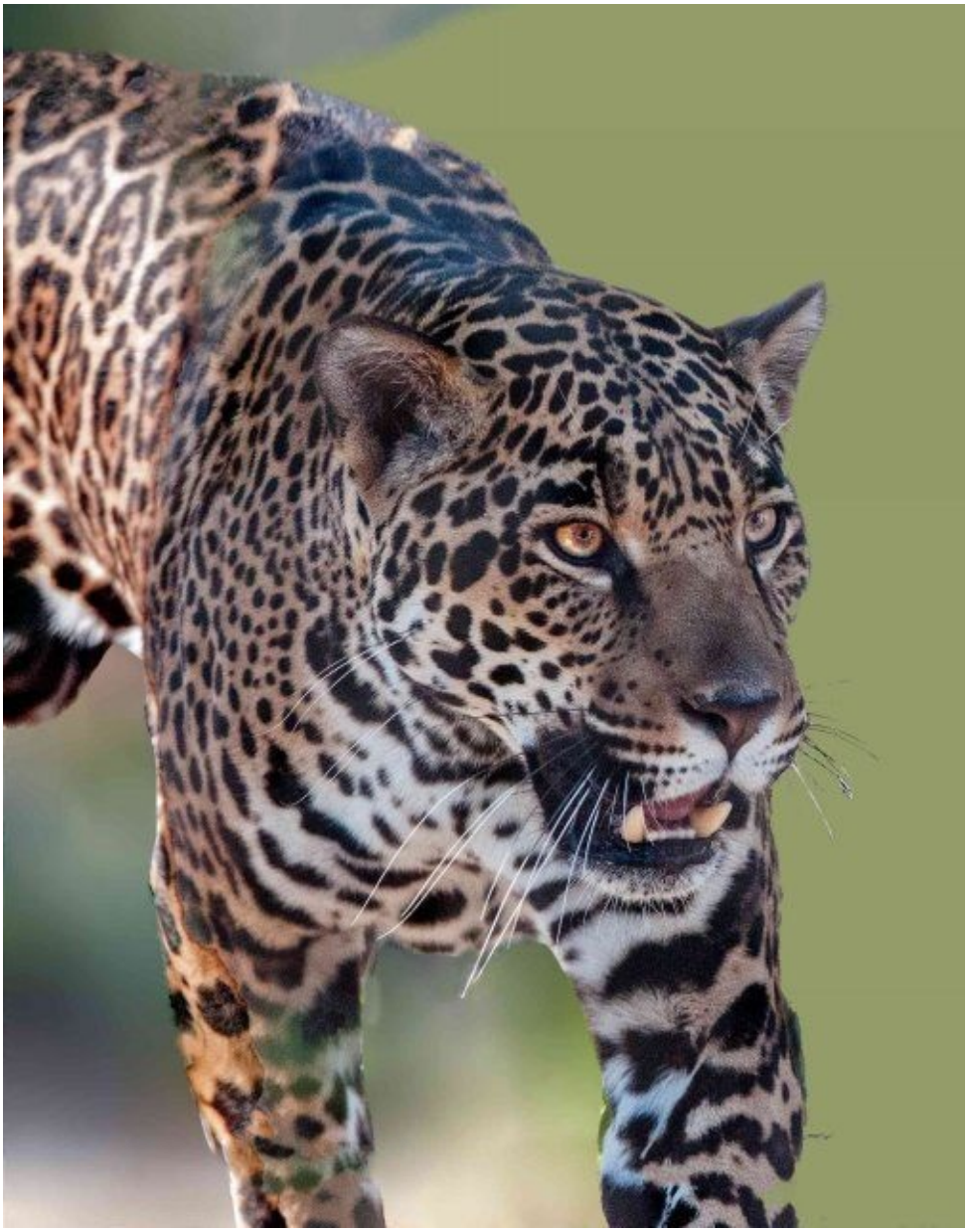
I managed to catch this cheetah before it ramped up to a fast speed. The composition is somewhat weak because the cheetah is facing away from the camera. I set the camera mode to shutter priority at 1/2000 second.

Image 121. Cheetah Running With Tail Swaying

Animals with tails, especially cats, use their tails for balance. Here we see her tail in action. Shutter priority at 1/3200 second.

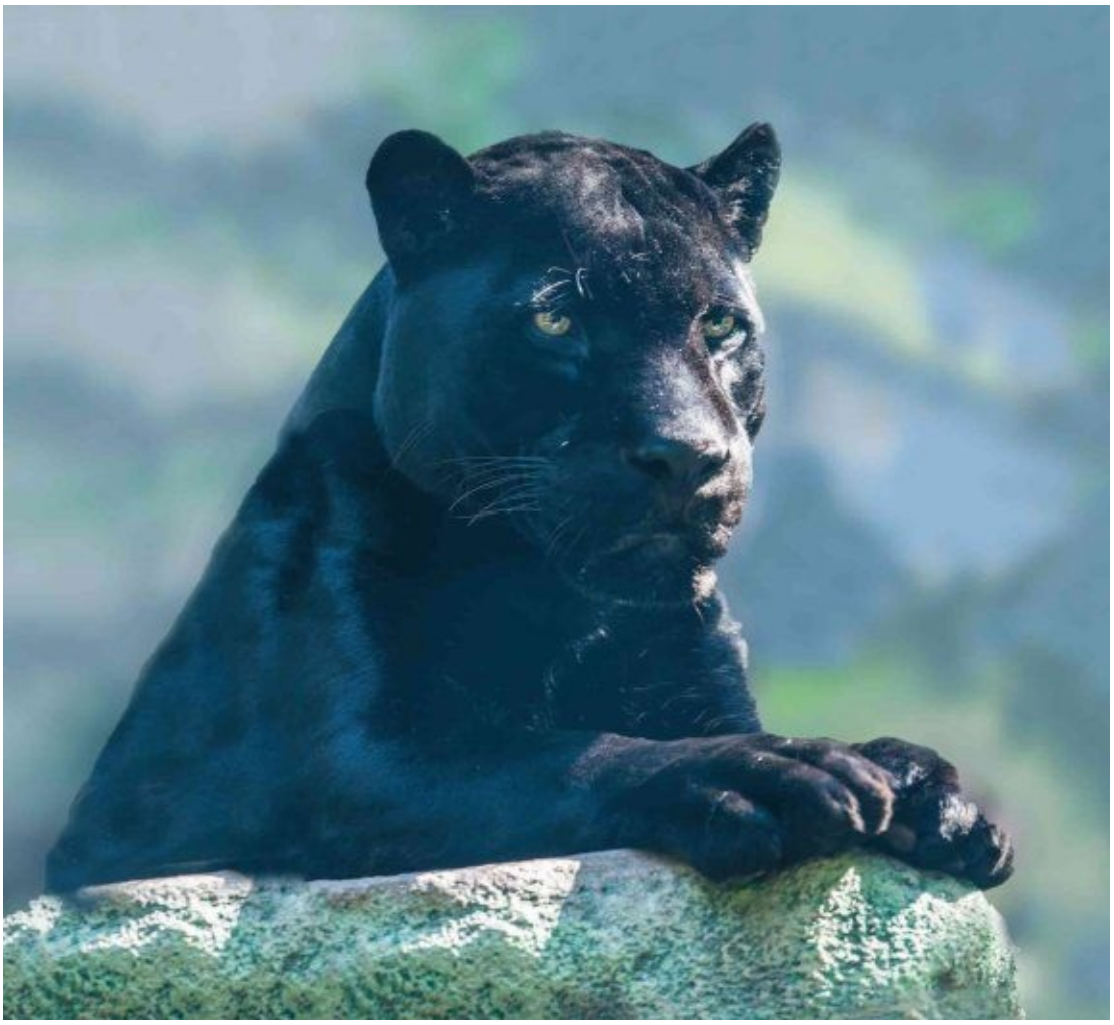
Chapter 10. Jaguars and Leopards

Image 122. Jaguar Walking



After watching this lone jaguar in a large outdoor exhibit that has cage bars around it, I came up with a strategy for capturing a better-than-ordinary image. I had noticed on previous visits that sooner or later, she comes to the far right of the exhibit and paces up and down dozens of times. On this trip to the zoo, I positioned my tripod and long lens in front of the far right of the exhibit, even though the jaguar was lying in the shade on the far left. After a few hours, she came over to the right and started pacing. My strategy was to focus the lens somewhat toward the back of the exhibit so that the cage bars would be out of focus. I tripped the shutter with my remote release each time she walked from the far back toward the front. By about the twelfth iteration of pacing she looked up so that I had a portrait as she walked. ISO 640 and shutter speed 1/2000 second with aperture at f/4.

Image 123. Black Jaguar



This jaguar was also in a cage with thick black bars. I waited until the jaguar rested toward the back of the cage so the wide aperture of f/3.5 would throw the bars out of focus.

Image 124, Clouded Leopard Looking Up

Here again I was faced with cage bars. I was able to capture this expressive pose with an f/3.5 aperture to throw the bars out of focus.

Image 125. Clouded Leopard Portrait

An aperture of f/5 was good enough to throw the cage bars out of focus and to create a soft background.

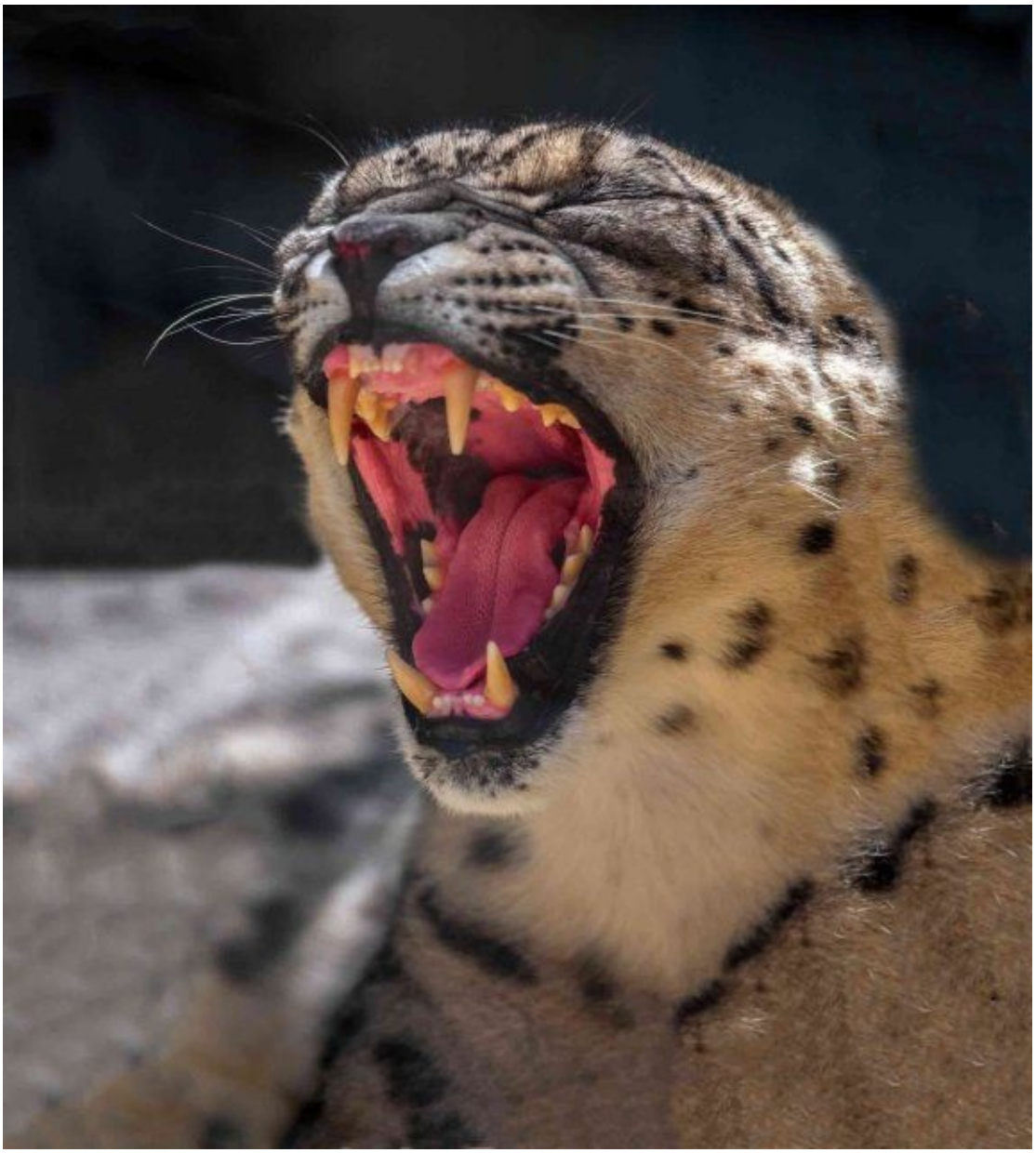
Image 126. Clouded Leopard Walking

On this bright sunny day, there were harsh shadows as well as areas of harsh sunlight. For most of the 2 hours that I spend watching this leopard, he stayed in the deep shadows. I persevered and the leopard finally came into the sunlight. ISO 100; shutter priority at 1/500 second. Camera selected an f/2.8 aperture.

Image 127. Eye Of The Snow Leopard

As happens more times than I’d like, I had the “wrong” lens with me on this trip to the zoo. Actually, I had brought a telephoto lens for a specific exhibit for which it was appropriate. But as I walked toward the zoo exit this snow leopard was active and I could not pass up the chance photograph her. The result is not a classic composition, but people find it compelling in its own way.

Image 128. Snow Leopard Yawning



This time I had a more appropriate lens for a snow leopard. Waiting patiently while the leopard laid there, I was rewarded when she bared her teeth in a giant yawn.

Image 129. Leopard Sleeping With One Eye Open

In post processing, I rotated this image so that his eyes are level. Although it creates a very odd oblique white space (which was the floor of the cage), this orientation helps you notice his watchful eye. Razor sharp whiskers contributes interest.

Chapter 11. Lions

Image 130. Lioness Walking

Capturing this lioness while she was in the shade on this bright sunny day enabled me to get her in mid-step and also retain the texture of her fur. ISO 2000; shutter priority at 1/800 second. Camera selected f/6 aperture.

Image 131. Lioness Portrait

The biggest problem with zoos is that the animals are bored and lethargic. Therefore, even when you can get a portrait of an alert-looking animal, you have succeeded!

Image 132. Lion Portrait

Even at rest, this majestic lion looks ready for action.

Image 133. Lion Full Length Portrait

Lounging stretched out on a platform with a thoughtful gaze as sunlight glints off his eyes.

Image 134. Close-up of Previous Image

This close-up crop of the previous image allows us to appreciate his eyes. It seems as if he is having kingly thoughts.

Image 135. Further close-up

One possible weakness of the previous two images is the inclusion of the platform upon which he is resting. In this close-up we lose a little of the context around the subject but maintain that far-away look in his eyes.

Image 136. Lion’s Full Set of Teeth

Although the real point of interest in this image is the lion’s teeth, it is nice to be able to include the entire animal in your image. That gives you the freedom to crop the image in artistic ways.

Image 137. Close-up of Teeth

The close-up of the previous image alleviates some of the problems of harsh sunlight which added overblown highlights in the lion’s fur.

Image 138. Lion Walking

Although unique portraits are interesting, it is beneficial to have animals in action as part of your portfolio.

Chapter 12. Tigers

Image 139. Tiger Walking Toward You

At this open-air exhibit, the tiger likes to pace up and down this ledge along the pool. With a strategy similar to what I employed for image 122, I positioned my camera at one point along the pace line and clicked the shutter (using a remote trigger of course) each time she stepped into view. This capture has her looking at the camera.

Image 140. Tiger Grooming

Direct eye contact, razor-sharp whiskers, and the detail of taste buds on her tongue. These factors made it well worth the hours I stood at this exhibit waiting for something special to happen.

Image 141. Tiger Full Length Portrait

I was fortunate to capture a sharp image as this one-year-old tiger rolled around on the ground. ISO 100, shutter priority at 1/60 second. Camera selected f/4 aperture. This was taken with a 36 MP high resolution camera.

Image 142. Close-up Of Previous Image

The stretched out pose of the tiger in the previous image produces a very elongated composition, which can be appropriate when I want a wide image. But with the crop shown here I wanted to see how a less extreme aspect ratio comes across.

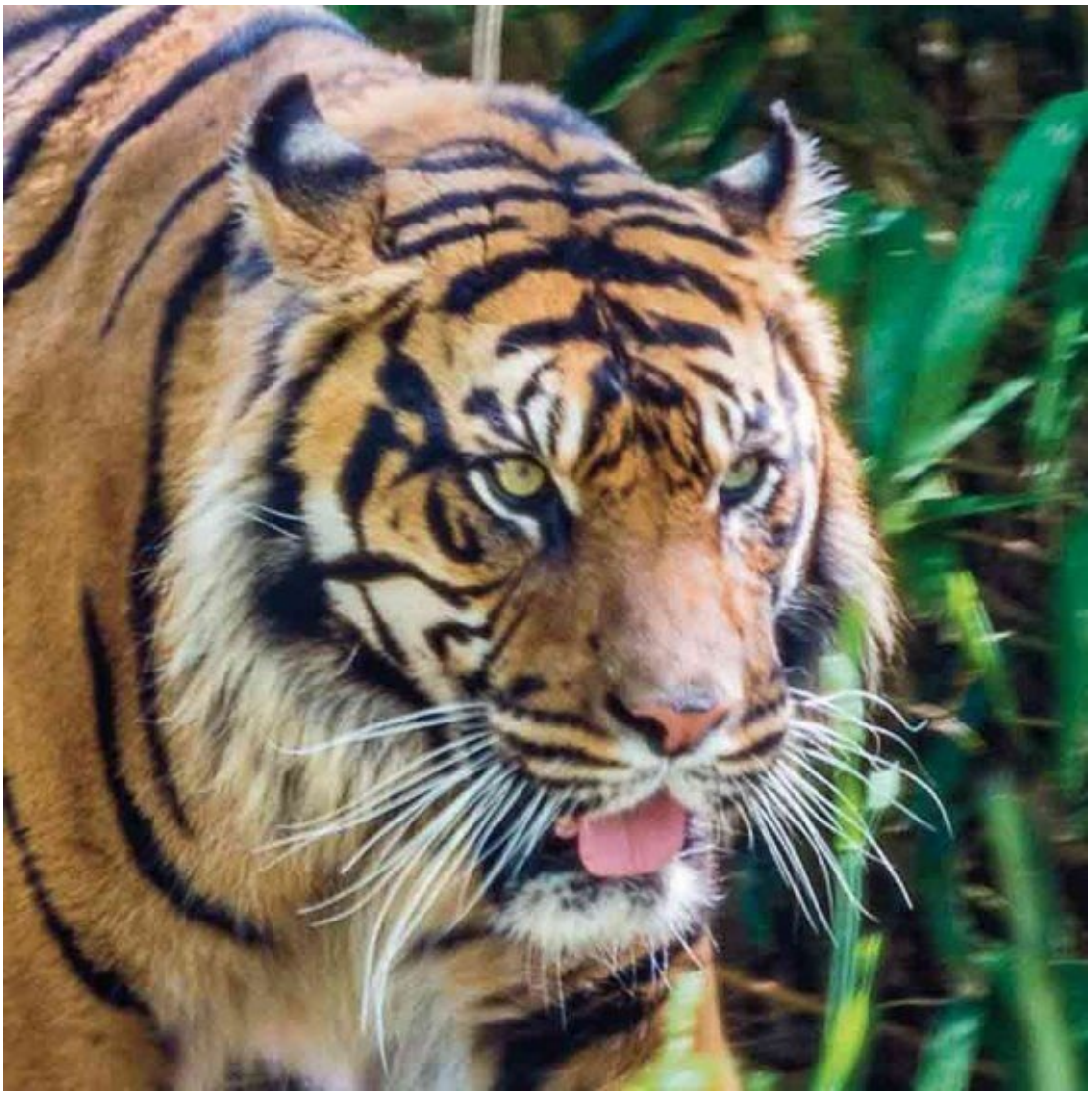
Image 143. Further Close-up Of Previous Image

This facial portrait close up as a square image shows just how sharp the original image is. And the square format produces a more pleasing composition. Many professional photographers who have used large format and medium format cameras in the past have tried high megapixel digital cameras and have published books of high quality photos taken with their DSLRs.

Image 144. Tiger Walking Among Foliage

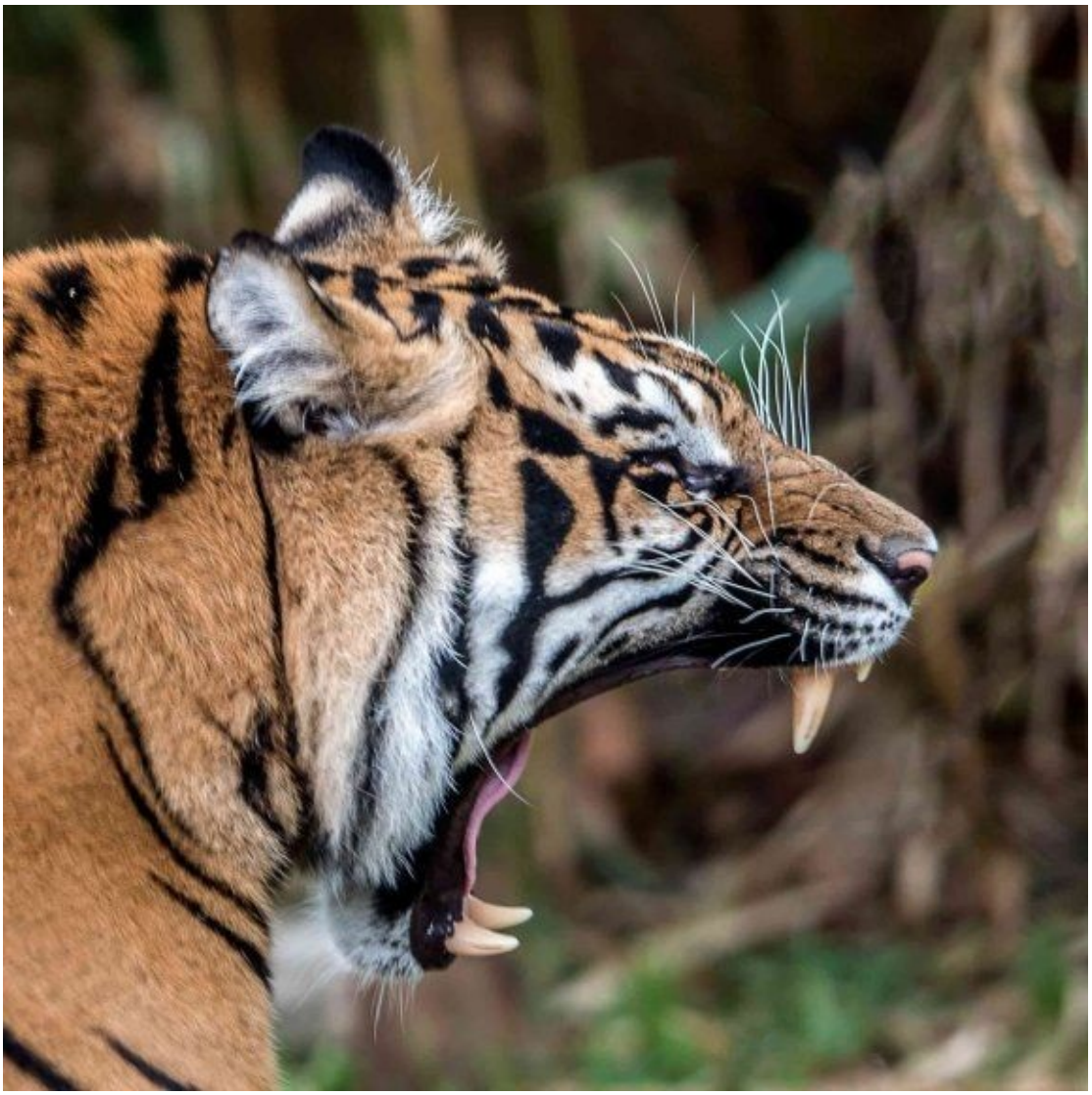
It is always nice when you can capture a wildlife image that looks as if it were taken in the wild, even though it was taken in a zoo.

Image 145. Close-up of Previous Image



This close up shows that the previous image does not have the sharpness as some of my other images.

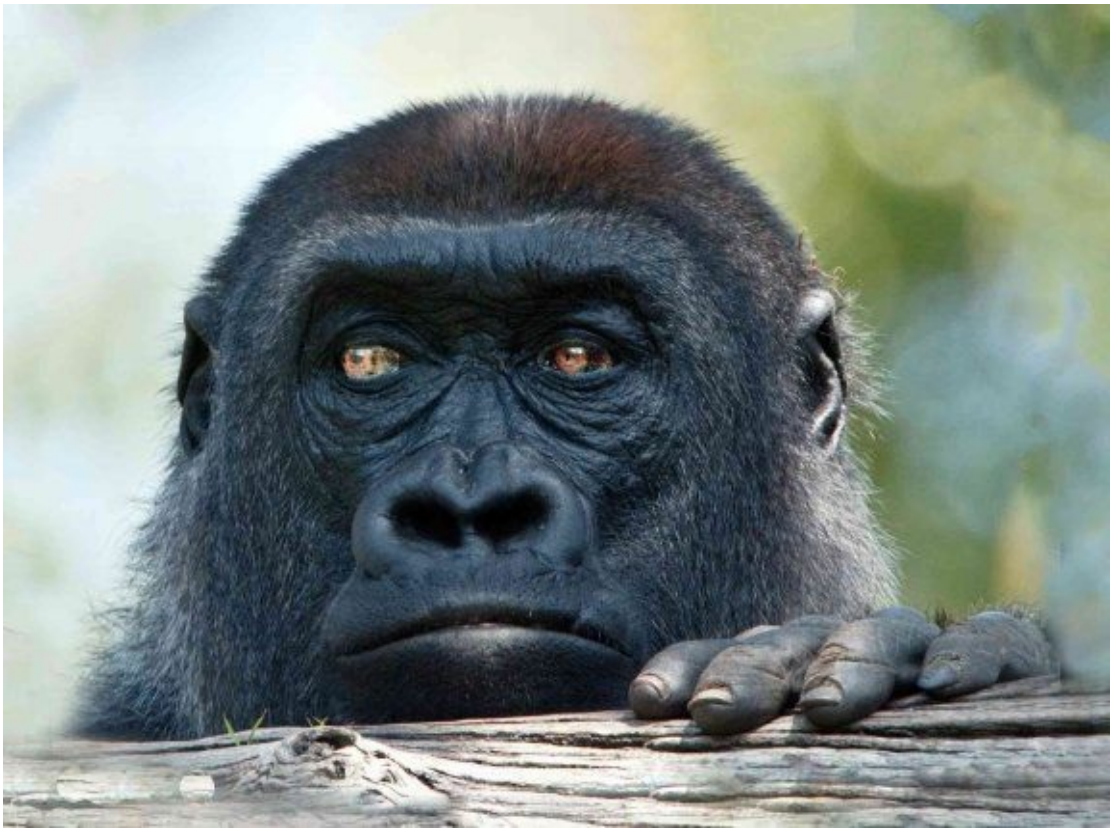
Image 146. Profile Of Tiger Yawning



This profile of a tiger yawn joins my various other teeth images, including Images 85, 86, 128, 136, 137, and others.

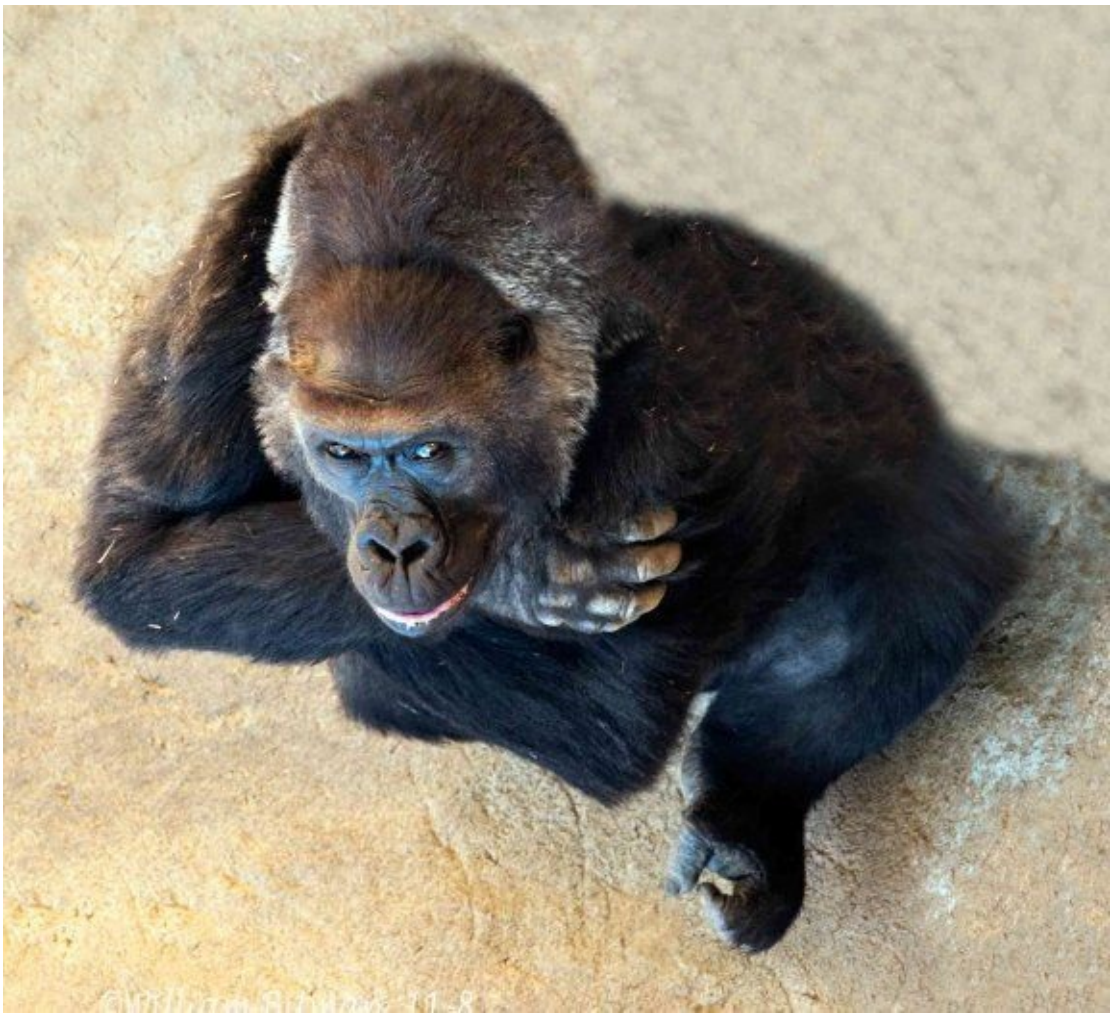
Chapter 13. Primates

Image 147. Gorilla Portrait



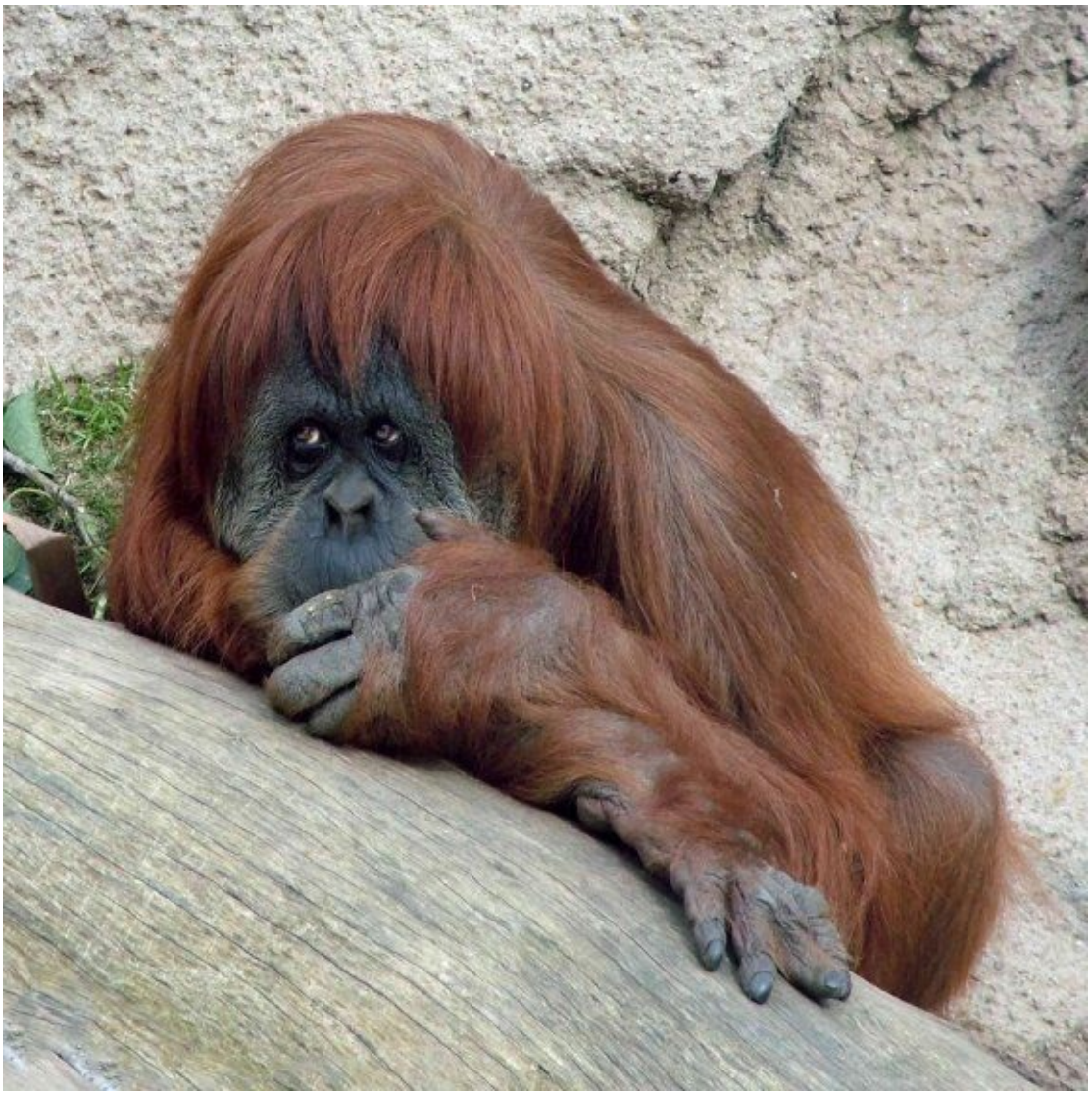
This gorilla had been alternately standing and sitting over and over again. When she stood and the sun shined on her eyes in just the right way, I took the photo. ISO 640, shutter speed 1/400 second, and f/10 aperture.

Image 148. Gorilla As Seen From Above



In this photo I made it seem as if I was standing above the gorilla. In actuality, this gorilla was lying on the ground. I rotated the image 180 degrees and created a more interesting pose.

Image 149. Orangutan

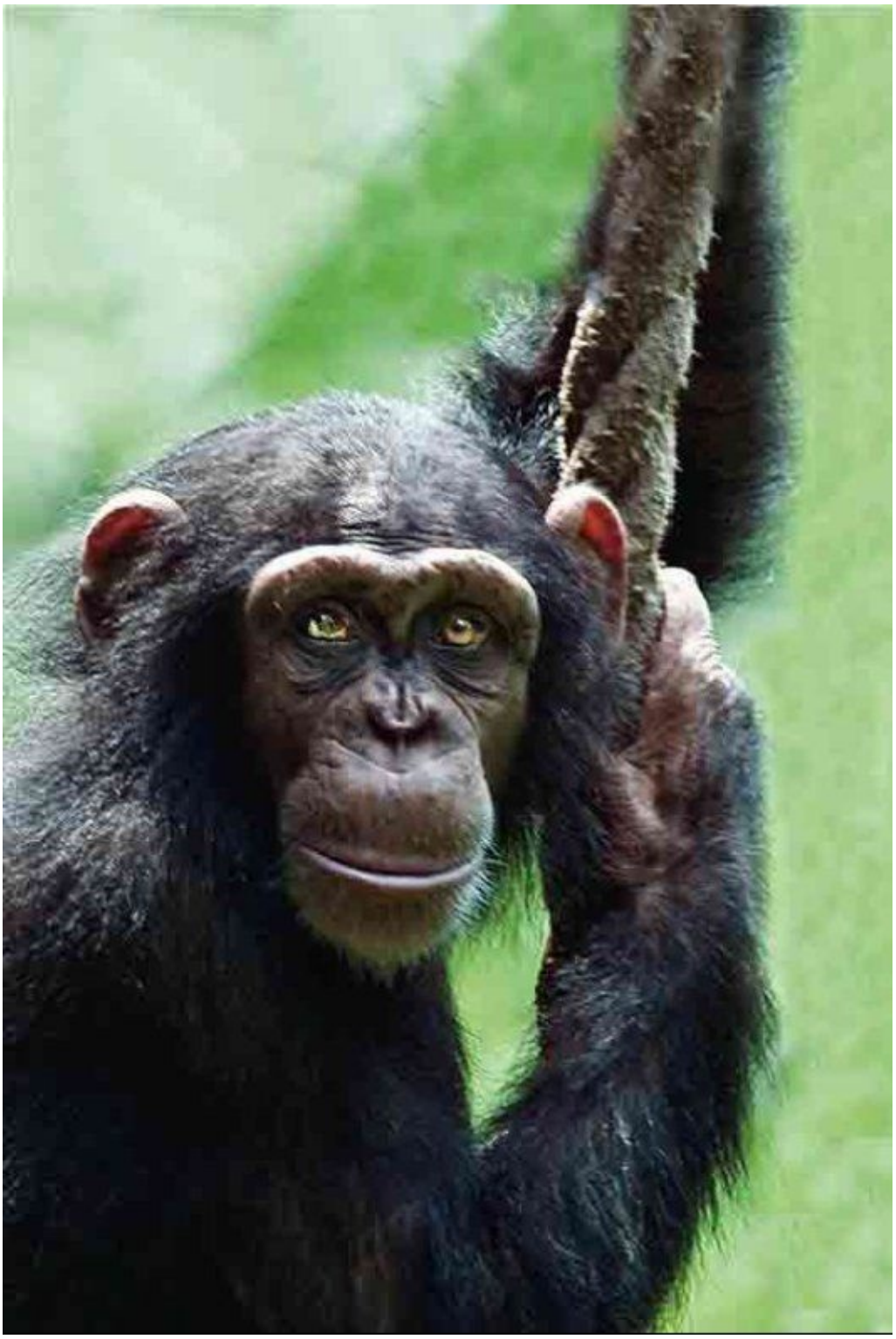


This orangutan was captured using a point-and-shoot zoom camera.

Image 150. Orangutan Standing On Her Head

Humor goes a long way in wildlife photography.

Image 151. Chimpanzee



Facial portraits are made much better when the eyes are expressive.

Image 152. Chimpanzee Relaxing On The Grass On A Sunny Day

As this chimp lounges on the grass finds the sun too bright. This is a very human pose that many people find humorous.

Image 153. Coquerel Sifaka Portrait

Sifakas (pronounced: shifak) are a type of lemur. This was a poorly lit indoor exhibit within a glass enclosure. I had to set the ISO to 10,000. In order to catch these fast moving primates, I set the camera to shutter priority at 1/1000 second. The camera had to set the aperture fully open at f/2.8.

Image 154. Coquerel Sifaka Portrait 2

On this occasion, this sifaka sat right under the light so I could get away with a lower ISO of 4,000.

Chapter 14. Koalas, Pandas, and Bears

Image 155. Koala Portrait

Although koalas sleep 22 hours a day, many zoos place fresh eucalyptus near a specific koala so that there is always an active koala during visiting hours. They can do this because koalas don’t mind what time of day they awake to eat. The paws and claws add extra interest to this image.

Image 156. Koala Portrait 2

Image 157. Red Panda Portrait

A cute pose such as this where the red panda’s smile and extended foreleg make him look like a cute and loving pet make this image a notch better than ordinary. I tried to get the entire tail into the picture but did not have a wide enough lens. Once I moved back, the panda had moved on.

Image 158. Close-up of Red Panda

This close up composition of the previous image brings out his look of innocent sweetness.

Image 159. Red Panda Walking

Getting animals in action is always a plus as long as you can keep the subject sharp. Here I set ISO to 2,000. I needed a shutter speed of 1/320 second to freeze the action. The camera selected f/14 which helped to keep the entire animal in focus.

Image 160. Red Panda Profile

During this visit to the zoo, I had brought my long telephoto lens. As on some other occasions, such as that shown in image 127, it was not the ideal lens for the red panda exhibit. I was able to make the best of it in this close profile showing her shiny eye and wispy whiskers.

Image 161. Giant Panda Chewing On Bamboo

The white fur of a giant panda is not a clean white as depicted in animated movies. But nonetheless it is a challenge to expose for both the deep black fur and the white fur. I set ISO to 200, shutter to 1/200 second, and aperture to f/2.8. The exposure what good and the subject is sharp. But to tame the high contrast, I reduced highlights and opened shadows in the raw file. The panda’s teeth and the shine in her eyes help make this a somewhat successful image.

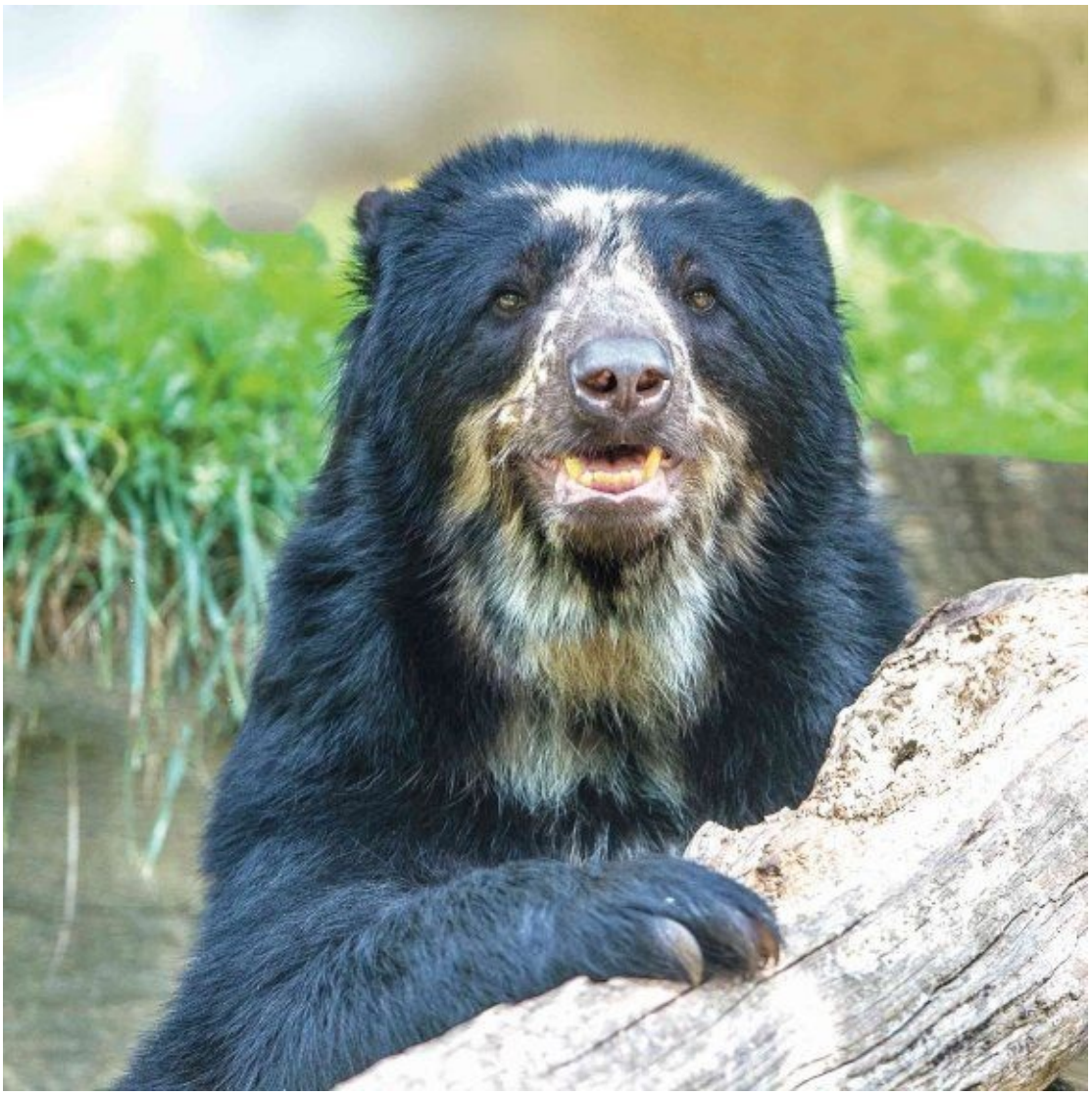
Image 162. Giant Panda Lying On The Ground

It is not often that pandas roll around on the ground, at least not in my experience. So this was a special opportunity. Note her 6 fingers of the forepaw. Actually the pad that looks like a thumb has no bone - pandas have only five fingers, but no opposable thumb. Also note the toenails on the hind paw. The catch light in her eye helps to give definition to her face.

Image 163. Giant Panda Smiling

This image was taken during the same session as the previous image. Her smile makes this a unique image.

Image 164. Andean Speckled Bear Portrait



This is about as close of a smile as anyone is going to get from a speckled bear.

Image 165. Polar Bear Portrait In Water

It’s always good when you can find different ways to get basic portraits.

Image 166. Polar Bear Underwater

The air bubbles add extra interest in this image taken through glass. ISO 1600, 1/5000 second, at f/2.8.

Chapter 15. Other Mammals

Image 167. Gray Squirrel On The Run

Backyard photography at its best. ISO 800, 1/1600 second, at f/4.5 aperture.

Image 168. Gray Squirrel Portrait

Even a quiet moment in the backyard has its rewards.

Image 169. California Brown Squirrel

I managed to include the entire tail of this brown squirrel.

Image 170. California Brown Squirrel Close-up of Previous Image

A close-up crop of the previous image provides a more balanced portrait. In general, whenever you can include an entire animal plus ample background around the subject, you have more compositional freedom later.

Image 171. Brown Squirrel Direct Portrait

In this situation, The direct portrait pose provides an opportunity for a close facial portrait without cutting off part of the subject.

Image 172. Rabbit

There is just a hint of motion in this image, with the rabbit’s foot up slightly as he walked toward me.

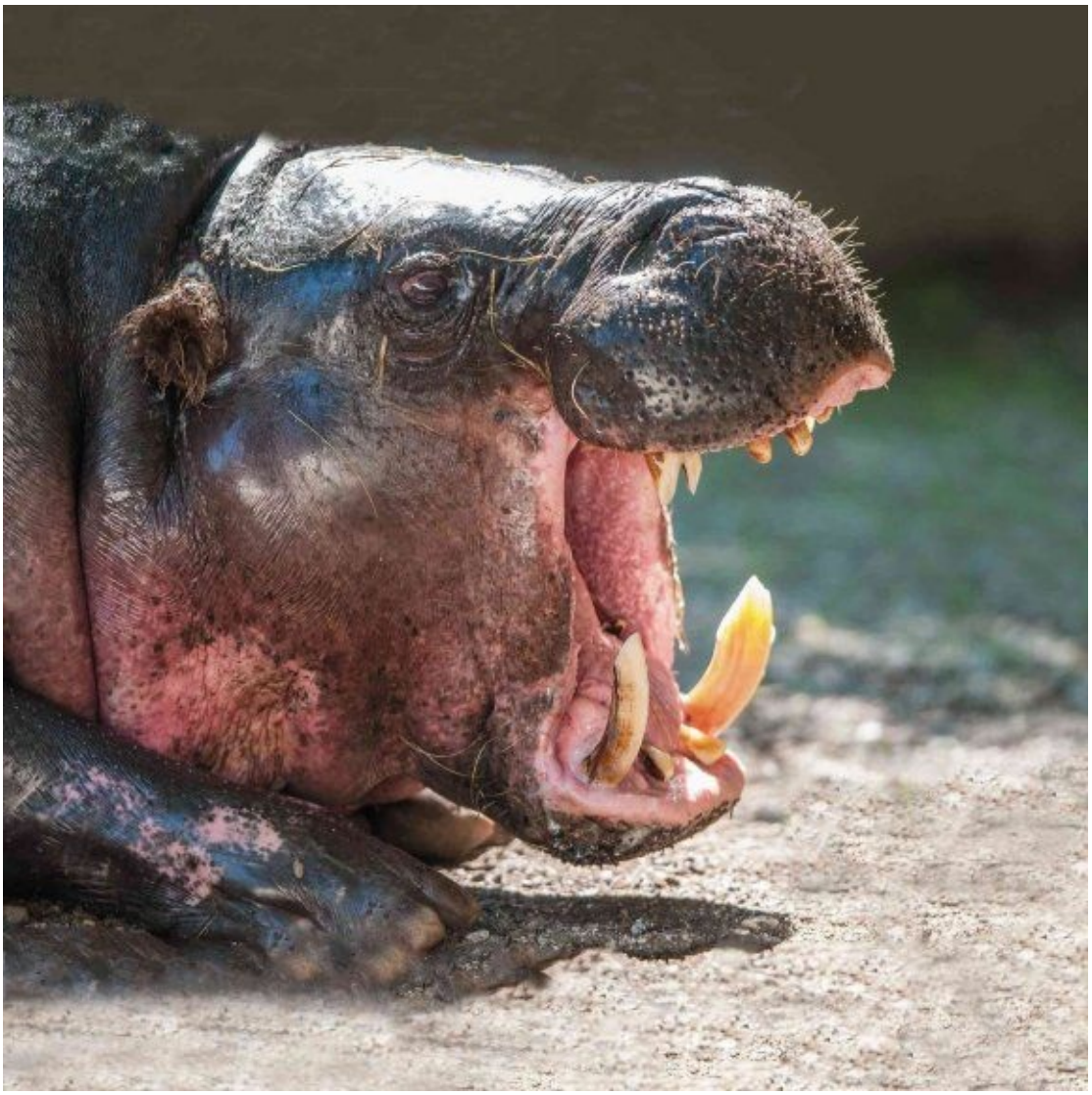
Image 173. Arctic Fox

Although an action pose or an alert portrait is more exciting, there are times when you can make the most of what is available to you. The catch light in the fox’s eyes and the texture of his fur make this image somewhat successful.

Image 174. Red Fox

This fox comes to my backyard regularly. I was able to capture him as he ran across the yard in the low light of early morning. ISO 20,000, 1/2500 second, at f/2.8 aperture.

Image 175. Pygmy Hippo

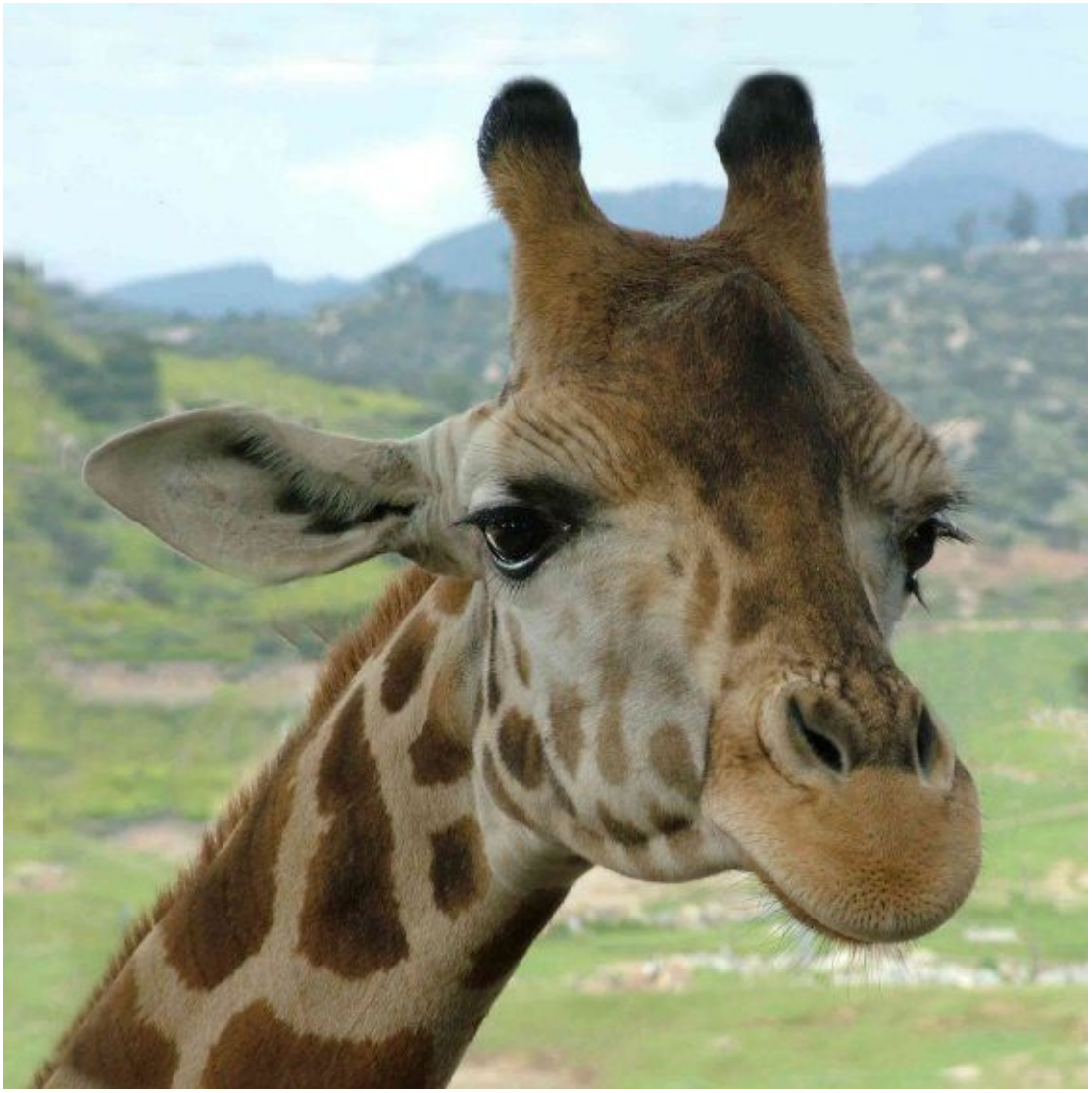


Sunlight shining on these distinctive teeth reveals the striated texture of their enamel. His expressive eye adds interest.

Image 176. Giraffe Portrait

Giraffe feeding areas at zoos are great places to get close-ups of giraffes without bars or buildings in the way.

Image 177. Giraffe Portrait Close-up



This close up of the previous image shows delicate detail of his chin hairs along with those gorgeous eyelashes.

Image 178. Deer Portrait

Another inquisitive backyard visitor.

Image 179. Horse

I see this horse on my morning bicycle ride. I took this image with my point-and-shoot camera which I try to keep handy.

Image 180 California Sea Lion Full Portrait

I took this image with a 16 MP APS camera with a telephoto lens. ISO 800, 1/640 second, at f/3 aperture.

Image 181. Sea Lion Facial Portrait Close-up of the Previous Image

This close up of the previous image shows great detail in the eyes and whiskers. He is Gilbert and Sullivan’s Major General if ever I saw one.

Image 182. Sea Lion Profile

This slight action pose was taken at ISO 2,000 on a cloudy afternoon. Shutter at 1,000/second and f/2.8 aperture. The lower light of this cloudy day necessitated a high ISO and open aperture. However, the alternative, a sunny day creates harsh highlights and difficult contrast. You can’t always wait for the ideal light cloud cover.

Image 183. Sea Lion Profile Close-up

Although there is some digital noise that is noticeable on his skin and especially on the pink inside of his mouth, nonetheless, you can almost feel the texture of the small hairs on his skin.

Image 184. Sea Lion Lying On The Beach

This white sea lion lying on the white sand was too good to pass up.

Image 185. Sea Lion’s Teeth Close-up of Previous Image

Rotating this close facial portrait crop of the previous image provides a more satisfying composition. This orientation is a more natural view so we can better appreciate his teeth and whiskers.

Image 186. Waves Crashing Around Sea Lion

I watched the tide coming in with its waves crashing against the rocks. As I walked along the shore, I spotted this sea lion holding his ground against the encroaching crashing waves. I was able to get a dynamic image with a 1/400 second exposure at f/10 aperture to get a deep depth of field.

Chapter 16. Wildlife Buddies

Image 187. Western Gull Pair

Compositions are always more interesting when there are two or three subjects, especially when they interact. In fact, many times when I present buddy photos I include flower images such as Images 2, 7 and 8.

In this image we see a changing of the guard. Mom and dad take turns sitting on the eggs.

Image 188. Zebra Pair

It takes patience to wait for just the right positioning of your subjects.

Image 189. White Tail Male Deer Dueling Antlers

My young backyard visitors. When they are not dueling, they are busy stripping the bark off my trees.

Image 190. Polar Bears At Play

One bear was chasing the other at top speed. Then the bear being chased suddenly stopped and faced his buddy. ISO 100, 1/80 second, at f/5.6 aperture.

Image 191. Close-up of Polar Bears

I wanted to keep enough of the forelegs of each bear, while enabling you to better see their teeth.

Image 192. One Eland Behind Another

This head-on perspective makes it seem like this eland has 4 horns.

Image 193. Elephants At Play

I was able to capture a number of different interactions between these young elephants at play, but this image is the most dynamic and balanced. ISO 200, 1/250 second, at f/8 aperture.

Image 194. Pygmy Goats

I visited this pair of goats three times starting from when they were just 1 month old. The zoo had raised the height of the fence around them for safety. I had to stand on my tip toes to get a clear view of them. I usually like to photograph animals at their eye level to get greater connection. Because that was not possible here, I used a longer lens – 100mm – which can reduce that feeling of distance. The result is a more intimate picture.

Image 195. Andean Speckled Bear Cubs

With each of the pairs of young animals that I present in this book, I found that they spent most of their time running around exhibits separately. Occasionally, siblings spend a few tender moments together. Those are the moments I wait for.

Image 196. Close-up of Previous Image

A closer look at sibling affection.

Image 197. Lion Cubs At Play

These 7 month old lion cubs were running every which way all over their exhibit area. I spent about 3 hours watching them on each of 4 different occasions over a 2 month period. On one visit I saw them run at each other 3 times. After totally missing the action the first 2 times, I was finally able to get off 3 shots as they approached, jumped up at each other and then fell to the ground. This photo of the cubs approaching each other was my only sharp image. I used a 200mm telephoto lens on a tripod. I set ISO to 1,000; shutter priority at 1/640 second, with aperture at a wide open f/2.8.

Image 198. Gemsbok Pair

These gemsboks were way off in the distance. I captured them with a 200mm lens with a 1.4x tele-extender attached.

Image 199. Prairie Dog Pair

At typical prairie dog exhibits, there are lots of animals racing around, popping their heads in and out of ground holes. Waiting for special moments pays off.

Chapter 17. Pelican Portraits

Image 200. Brown Pelican Swimming

After I had taken many unique poses of pelicans, I felt I should have at least one classic pose. Currently, I have 30 pelican images in my portfolio, half of them are of pelicans in flight. Oddly enough, this fairly straight forward pose is the last photo I have taken (so far) of pelicans.

Image 201. Brown Pelican Rubbing His Head And Pouch

Sunrise yoga instructor. Note that this was taken during mating season, as evidenced by his deep red pouch.

Image 202. Brown Pelican Airing Out His Pouch

This was the only time I caught a top view of a pelican with wide open pouch. Exposure at 1/800 second at f/3.5 aperture. The lower beak of a pelican is pliable so that it becomes twice as long and 5 times as wide as its upper beak. It is hard to believe that this extended lower beak is the same beak as you see in the previous 2 images.

Image 203. Close-up of Pouch of Previous Image

There are a number of interesting details in the previous image which are hard to notice unless you see an enlargement. Notice the veins in the skin of the pouch. Also notice his right eye looking straight up.

Image 204. Angled View Of Image 202

I have played with the positioning of this image to try to come up with a less extreme aspect ratio. Although I prefer a close up presentation, it is difficult to tell what this is a picture of unless they see the entire bird.

Image 205. Angled View Close-up of Previous Image

This square aspect composition tends to be my favorite of this image.

Image 206. Pelican Neck And Beak Straight Up

Find his eye in this unusual pose. Also notice the ends of his beaks. The yellow curved tips fit together. Look closely at the previous image and you will see both yellow tips. That is how you can convince yourself that the open pouch of the previous image really is the lower beak. It’s always nice when you have images that people must look at closely many times to understand what they are looking at.

Chapter 18. Heron Portraits

Image 207. Great Egret Poised To Catch Fish

I took this photo at Shark Valley in the Everglades, Florida. I highly recommend nature photographers and nature lovers to spend time in the Everglades, especially Shark Valley and Royal Palm Lake.

In this image, the egret is lifting his wing to throw a shadow on the water so he can see fish as they hopefully will swim by.

Note that all egrets are herons (but not vice-versa).

Image 208. Great Egret Stretching His Neck

It is amazing that this egret is the same species as the egret in the previous image.

Image 209. Great Blue Heron

This heron was in the back in the shadows and suddenly stepped into the sunlight, conveniently providing me with a perfect statuesque pose.

Image 210 Great Blue Heron Silhouette

As I was leaving this wildlife refuge at sunset, I spotted this classic scene. ISO 200, aperture priority at f/10; shutter speed 1/250 second.

Image 211. Tricolor Heron

The sparkling blue lake water creates a compelling background.

Image 212. Night Heron

Getting this heron in mid-step gives this profile pose a little something extra.

Image 213. Cattle Egret

The spread feathers on his head, along with his eye and beak in sharp focus make this a successful image.

Image 214. Close-up of Previous Image

This close composition of the previous image emphasizes the important aspects of the bird.

Image 215. Snowy Egret Fishing

I’m not sure whether this snowy egret brought up something edible or whether the objects are just twigs. But the way he looks at his catch is interesting.

Chapter 19. Other Bird Portraits

Image 216. Anna’s Hummingbird

My image as captured includes his entire body and wings, but I feel that the detail of the head, especially the head and neck feathers, deserve a closer look. I needed a shutter speed of 1/4000 second to get the wings somewhat sharp. Although hummingbirds flap their wings “only” 250 times a second, I find that a shutter speed of 1/250 second produces a very blurry image. This is because the angle of the wing creates the need for a shorter (faster) shutter speed.

Image 217. Male Northern Cardinal

The stern stare on this cardinal reminds me a little of Angry Birds.

Image 218. Male American Goldfinch

One of the things I try to accomplish when photographing goldfinches is to achieve clear definition around the entire eye. The black feathers of the forehead make this difficult because they usually cover up part of the delicate eye ring around the eye. In this classic profile pose, the way he turns and tilts his head slightly, causes the black feathers to stay off his eye, making the entire circumference of his eye ring visible.

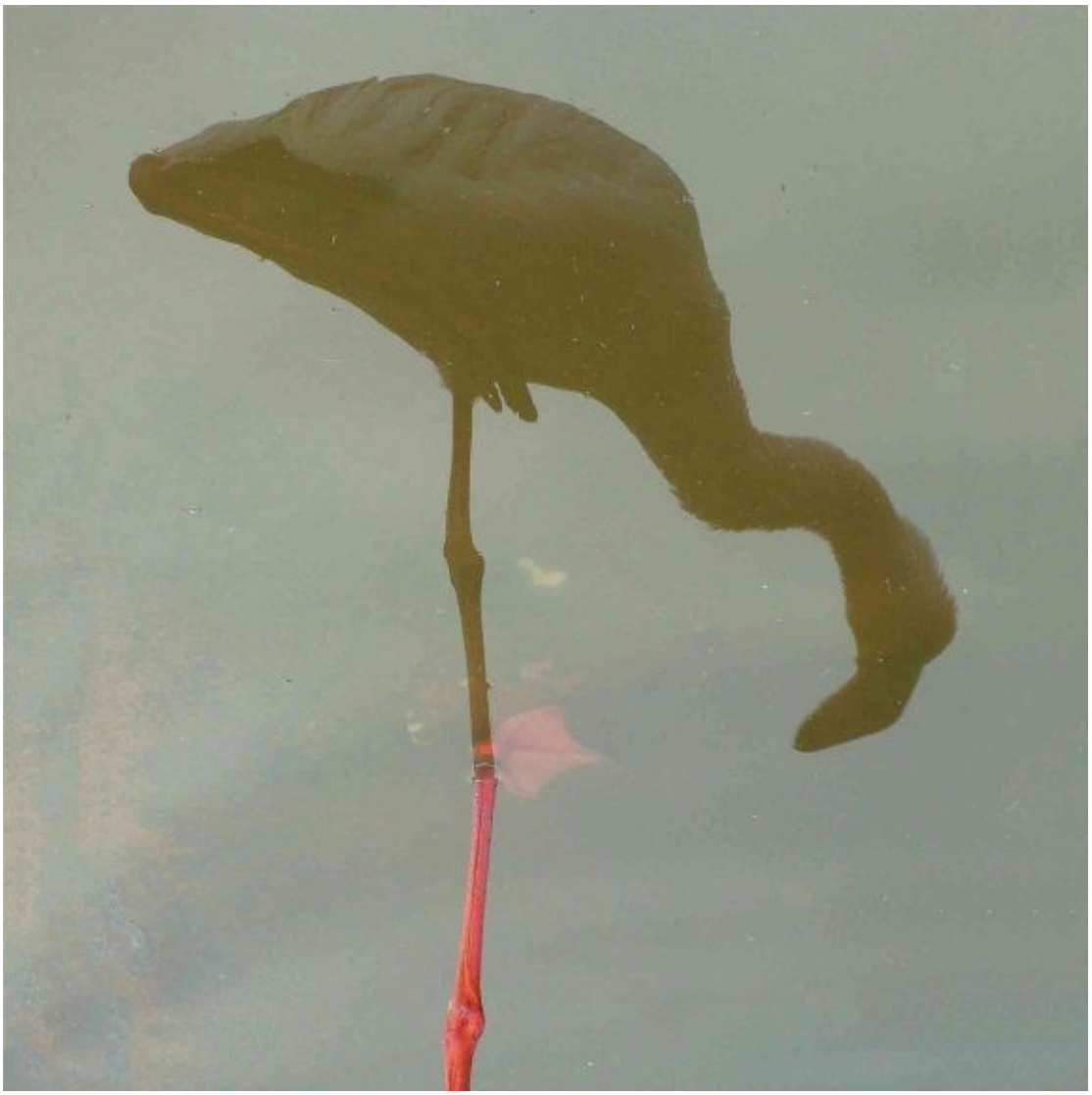
Image 219. Male White-Throated Sparrow

This sparrow conveniently alighted on this delicate stem in my backyard. The plant’s white fluff creates a halo-like background.

Image 220. Caribbean Flamingo

The figure 8 shape of his neck provides a tight composition, while retaining his furtive glance.

Image 221. Flamingo Reflection



To create a somewhat puzzling subject, I rotated this image 180 degrees so the reflection is where you would expect the bird to be. I left enough of the actual leg to provide context for the reflection. Note that the water refracts light in such a way that the webbed foot meets the reflection of the leg.

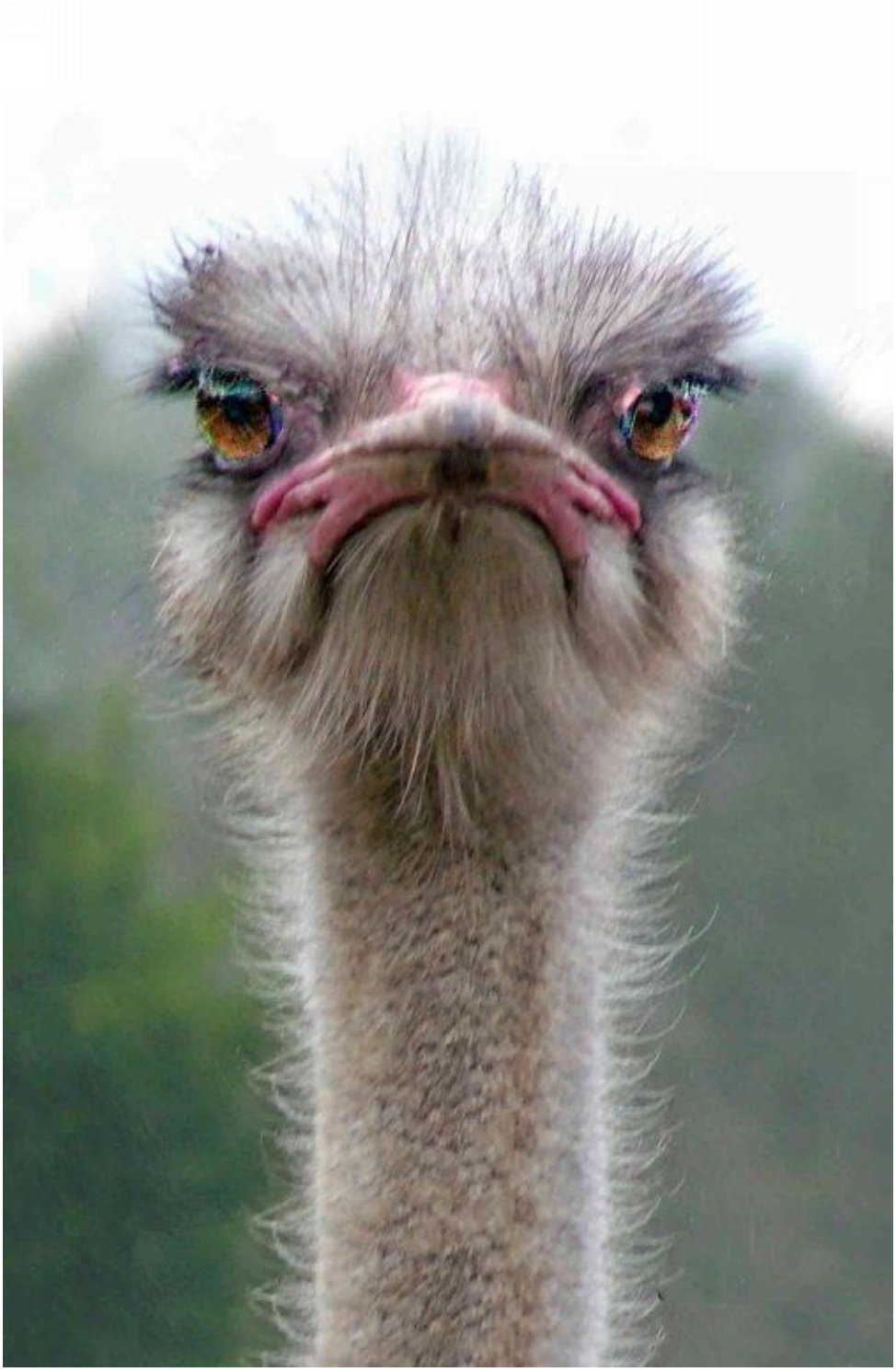
Image 222. Western Gull On Her Nest

She took a breather to stretch her legs after sitting on her eggs for hours. Note that the newborns have the same color and speckled pattern as the egg shells, as seen in images 69 and 90.

Image 223. Yellow Crowned Crane

The sharp detail of each quill of his yellow crown helps to make this image successful.

Image 224. Ostrich



I was at a drive-through safari with the passenger side window down when this ostrich popped his head into my car.

Image 225. Ostrich Beak Wide Open

It is worth staying at one exhibit and waiting for a special moment like this to occur.

Image 226. Wood Stork

As I bicycled through the everglades I noticed this stark figure camouflaged among the trees against the sky. Naturally, I had my point-and-shoot zoom camera in the handlebar bag.

Image 227. Egyptian Vulture

As with just about all my animal portraits, waiting for the animal to look into the camera is worth the wait. It helps to use a telephoto lens so you can stay far enough away so the subject does not turn away from you.

Image 228. Close-up of Egyptian Vulture

The unusual head feathers make this an interesting close-up portrait.

Image 229. Snowy Owl

This owl was standing toward the back of his cage so I could focus past the cage bars.

Image 230. Snowy Owl Close-up of Previous Image

This close-up crop of the previous image brings out how delicate the feathers on his beak are.

Image 231. Keel Billed Toucan Profile

I was able to photograph this bird just as he caught a spider on his sticky tongue. At this indoor bird house, I had to set the ISO to a moderately high setting of 1600 because of the somewhat dim lighting of this exhibit. I needed an aperture of f/2.8 and I was able to freeze the action at 1/160 second.

Image 232. Keel Billed Toucan Portrait

Although you barely see his eyes, this portrait posture delivers a unique view. The delicate ring of red feathers add interest to the image. I still had the aperture set to f/2.8 which is does not provide enough depth of field for this pose. Therefore, the beak is not in focus. I should have closed the aperture down to about f/16 and set the camera on auto-ISO which enables the camera to select the ISO necessary for a proper exposure.

Image 233. Secretary Bird

This is another example of waiting for the subject to be far enough behind the cage bars so that focusing on the subject causes the bars to be so out of focus they are invisible. Her gorgeous eyelashes provide special interest and her slightly open beak gives the pose a little something extra.

Image 234. American Bald Eagle

This eagle was displayed at a bird festival. He had been injured and nursed back to health, but he is not able to survive in the wild.

Image 235. Peacock Profile

This was an unexpected opportunity to capture exquisite detail of a peacock’s head. I had set up my tripod for a particular zoo exhibit, when suddenly, this peacock showed up. The delicate tiny feathers at the ends of his 25 crests, his eye ball, the small concave indentation area on his eye, the white skin area under his eye, the feathers covering the tympanic membrane, and his nostrils, all combine to give the viewer lots of detail to examine.

Image 236. Peacock Against His Feathers.

There is just enough of his eyes and catch light on his eyes to give context to his beautiful feathers with all their color and sharp detail.

Chapter 20. Pelican Flight

Image 237. Brown Pelican In Flight

At ISO 800 on this clear sunny day, I set my camera to shutter priority at 1/1250 second. The camera set the aperture to f/13. I composed the subject using a computer program such that the wing tips are in opposite corners of the image.

Image 238. Eye Level View of Brown Pelican Flying With His Wings Up

This pelican circled over the ocean near the shore several times. I had a strategic position on a hill so I was at eye level with the bird. Each time he came close to me I snapped the shutter. During this go round, I succeeded in getting capturing him sharply with a 1/500 second shutter speed.

Image 239. Portrait View of Pelican Flying

I positioned myself along a line where I saw pelicans tended to follow. I was fortunate that many pelicans came by so that eventually I was able to get a sharp head-on photo at 1/3200 second.

Image 240. Pelican Dive Bombing

One of the ways pelicans catch fish is to dive straight down and catch them by surprise. I managed to capture this action at 1/1250 second in shutter priority. The camera set aperture to f/16 with ISO at 800.

Image 241. Head-on Portrait of Pelican In Flight

I used a similar technique as I did for Image 239 for this shot. I was taken by surprise when this pelican came in lower to the ground than usual, thus giving a more eye level view. Shutter speed at 1/1000 second.

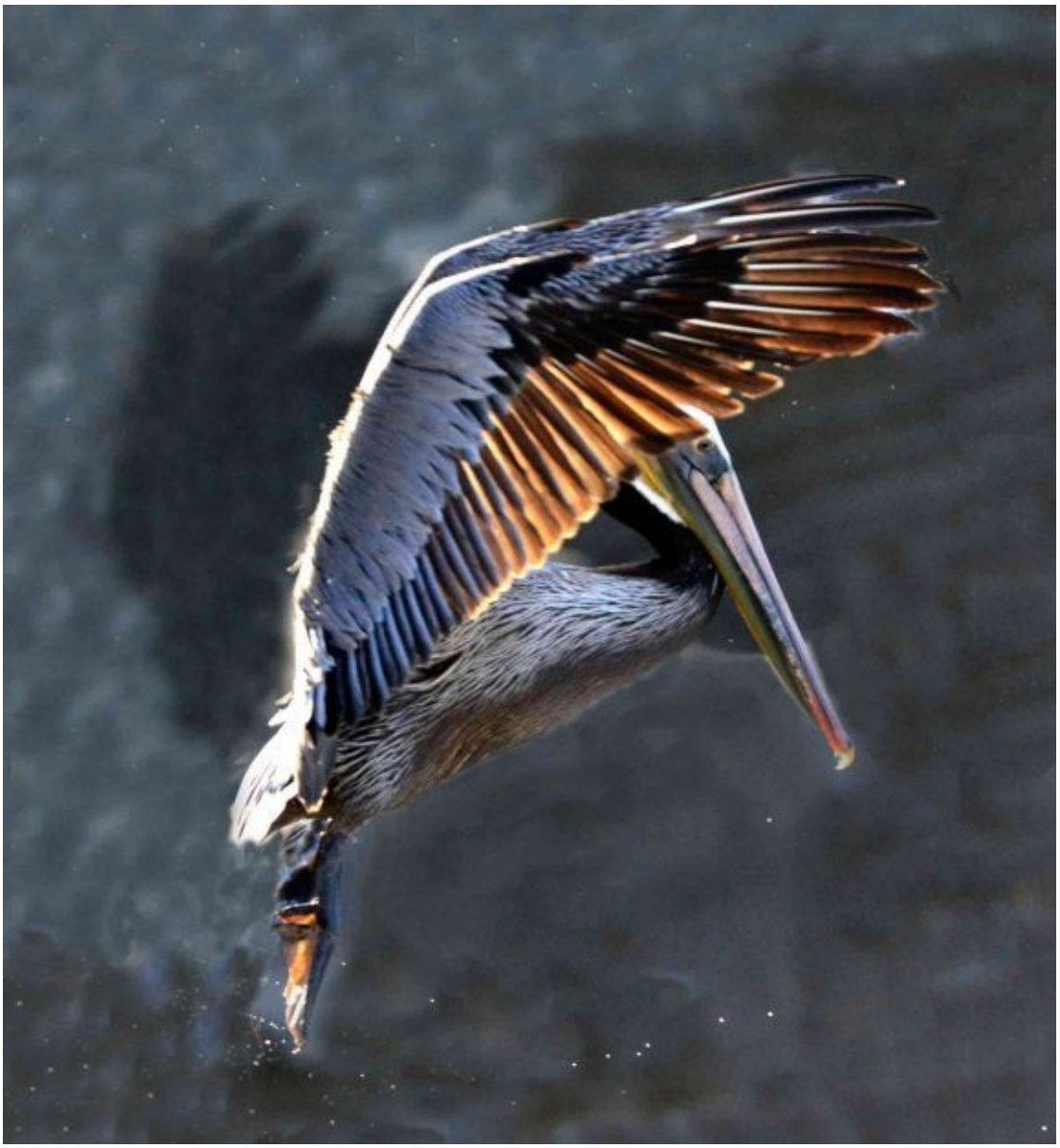
Image 242. Pelican Landing

During my many outings to watch pelicans, I observed their different behaviors and I tried to get a sharp image of as many different poses and actions as I could. When they land, they can strike a clumsy humorous pose. This image makes it look like a pelican floats suspended in mid air. In reality, I had to take this activity many times before I had a sharp image of this fleeting moment. I set my camera in shutter priority mode at 1/1250 second with ISO at 1600. On this sunny day the camera set the aperture to f/16 which provided excellent depth of field.

Image 243. Pelican skimming The Ocean’s Surface

Image 240 shows the dive bombing technique that pelicans use to catch fish. This image captures another of their fishing techniques: skimming the water surface to scoop up fish. This image required a 1/1600 second shutter speed.

Image 244. Profile Of Pelican Wing Feathers



This side view of a pelican with his wings spread has unique lighting. The pelican was landing with the stone wall of a cliff as a backdrop, with the sun behind and beyond the cliff. Under these conditions, the bird would be in a shadow. But the sun was just high enough to create a backlit glow on the wing feathers. An unusual combination of factors can produce a unique image.

Image 245. Pelican Silhouette Against Orange Sunset

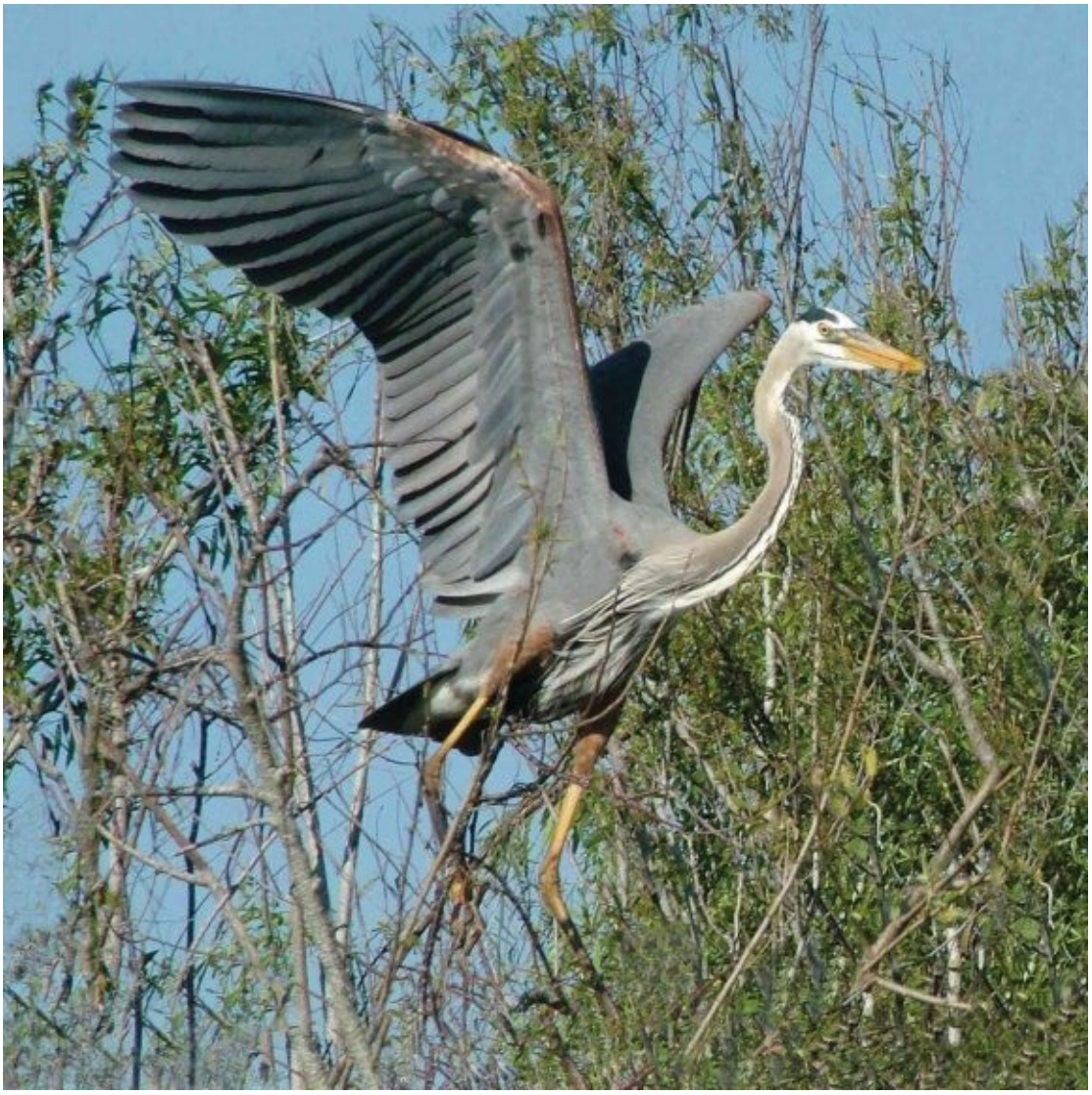
An hour earlier on the afternoon that I captured this image, I had set my camera’s ISO to 320 because it had been a sunny day. As I walked back to my car during sundown, I turned around to see this gorgeous orange sunset. I quickly managed to capture this silhouette image at 1/1000 second, not realizing that the ISO was still set at 320 which is woefully too low for this late in the day. The result is that the ocean waves are not sharp enough because the camera had to set the aperture to f/5 which does not produce enough depth of field for this large scale landscape.

Image 246. Close-up Of Previous Image

This composition is an attempt to salvage the previous image. However, another difficulty is that the background ocean waves have blown-out highlights, which could have been avoided with a smaller aperture, which would have also produced sharper waves.

Chapter 21. Heron Flight

Image 247. Great Blue Heron Alighting On A Tree Top



I was able to capture the beauty of this great blue heron’s outstretched wing with a point-and-shoot zoom camera.

Image 248. White Heron In Flight

The blurry trees in the background gives dimension and perspective to the bird in flight.

Image 249. Great Egret Landing On A Tree Top

I needed a shutter speed of 1/1000 second to capture this bird with his feathers outstretched. The sunlight enables you to see detail, especially in the top wing feathers.

Image 250. Great Egret Landing On The Lake

This image would be more successful if the head and body had not been in the shade. But the sunlit feathers of his left wing are brightly lit. I set ISO somewhat higher at 800 to deal with the early morning light. I needed a shutter speed of 1/4000 to capture this fleeting moment of impact.

Image 251. Close-up of Previous Image

This cropped composition excludes the reflection to bring more detail in the bird. However, it is apparent that the shade produces noticeable digital noise.

Image 252. Further Close-up of Image 250

This composition tries to show the feather detail, but it shows that the subject is not as sharp as it needs to be. The overly shaded subject, the digital noise, and the softness of focus prevent this from being a truly successful image.

Image 253. Snowy Egret In Flight

The brighter daylight on this snowy egret enabled an ISO of 800 to produce a smooth noiseless image. Even with an action-stopping shutter speed of 1/2500 second, the camera was able to set the aperture to f/22 which provided plenty of depth of field to keep the entire subject in sharp focus. Adequate light makes all the difference.

Image 254. Snowy Egret Take-Off

There are areas of shadow and areas of highlights on the bird, creating high contrast. However, the fanned-out feathers of his left wing has wonderful texture and an artistic fanned-out curvature.

Image 255. Snowy Egret Wings Formed Into A Heart Shape

I had set up my tripod in an area with a view of marshes as well as a wooded area. I saw a heron far off in the brush, so I trained my telephoto lens on him. I waited over an hour before a fish swam by in the marsh, causing him to fly to try to get it. As you can see, I caught his flight action just as his wings were down, creating a heart shape. ISO was set at 200; shutter speed was 1/400 second, with aperture at f/5.6.

Image 256. Close-up Of Previous Image

I have printed this image as various orientations and compositions. This image brings out the heart shape distinctly.

Chapter 22. Hummingbird Flight

Image 257. Male Anna’s Hummingbird Portrait In Flight

Most of my hummingbird images are profiles. It was a rare opportunity when a hummingbird was just about to alight on a delicate branch directly ahead of me as shown in this image. Shutter speed was 1/2000 second. This image is similar to image 216, although that image has greater sharpness and texture because it was taken at 1/4000 second.

Image 258. Male Anna’s Hummingbird Wings Over His Head

I found it very rare to capture a hummingbird with his wings over his head. Of my 40 successful hummingbird images, only two are with this wing position.

Image 259. Male Anna’s Hummingbird Jumping For Joy

In images 216, 257 and 258, the entire head of the male Anna’s Hummingbird is pink. In this image, his neck is pink but his forehead is dark gray. The fact is that the male hummingbird head is usually black or gray, or tan just like the female’s. But when the sunlight strikes the male head and/or neck feathers in just the right way, his special color appear. In the case of Anna’s, it is pink.

Image 260. Male Hummingbird Reaching For Nectar at a Fuscia Lady Eardrop

You can see enough of the lower back of this bird to see some iridescent green feathers. That is an indication that this hummingbird is a male. Judging by the brown spots on his head, he is an immature bird.

Image 261. Detailed Hummingbird Tail Feathers

In the previous image you can see how the back of his tail feathers are black at the tips and white at the ends. In this image, showing the front of the tail feathers, you can see their tri-color pattern.

Image 262. Translucent Wing Feathers

At an exposure of 1/3200 second, I was able to get the wing feathers in unusually sharp focus. You can appreciate how thin and translucent a hummingbird’s feathers are because you can see through the feather - not only his eye - but even the catch light on that eye!

Image 263. Hummingbird Love At First Sight

In my west coast backyard, a specific male Anna’s Hummingbird frequented my hummingbird feeder every day. Hummingbirds are extremely territorial. The male bird (on the left, where his head feathers are mostly black) keeps guard and chases away any other (male) hummingbird. I was fortunate to be watching when a female came flying overhead. It was love at first sight and he allowed her to land near him. From that day on, they were inseparable.

Image 264. Black Chin Hummingbird Portrait In Flight

The male of this species of hummingbird has a lower throat that turns purple when the sunlight hits it at just the right angle. Shutter speed was 1/4000 second.

Image 265. Black Chin Hummingbird

Here is another example of where I repositioned the subject to create an artistic composition. I rotated the image so that the ends of the wings are pointing to opposite corners. Similar such images are 60, 237, and 240.

Image 266. Ruby Throated Hummingbird Floating

Of the approximately 20 species of hummingbird in North America, the only one found on the east coast of the US is the ruby throated. And the ruby throated is the only hummingbird species on the east coast. I was able to get this floating dive position with a 1/8000 second shutter speed.

Image 267. Ruby Throated Hummingbird

This dynamic flight position makes even an ordinary looking hummingbird interesting.

Image 268. Ruby Throated Hummingbird At Purple Salvia Flower

It helps to have plants that hummingbirds love in addition to having feeders. It is the shape of the flower that attracts them. Trumpet-like flowers are some of the best for attracting hummingbirds.

Chapter 23. Other Birds In Flight

Image 269. Osprey Landing

A pair of osprey were building their nest. As they were flying back and forth to and from their nest, I managed to capture this classic landing posture.

Image 270. Eagle With Freshly Caught Fish In His Talons

I am blessed with the fact that eagles stay the winter near a river that is only 50 miles away from my home. After getting numerous successful eagle flight images, I was fortunate to capture this eagle with a fish in his talons. The eye of both the eagle and fish are sharp.

Image 271. Rosette Spoonbill

On this beautiful clear sunny day at a Florida national wildlife refuge, I spent a few hours watching a flock of spoonbills. This was the only truly successful image, but it was well worth the time spent.

Image 272. Alternate Composition Of Previous Image

Because the reflection is not sharp, I feel that a square composition that concentrates on the bird is a better composition.

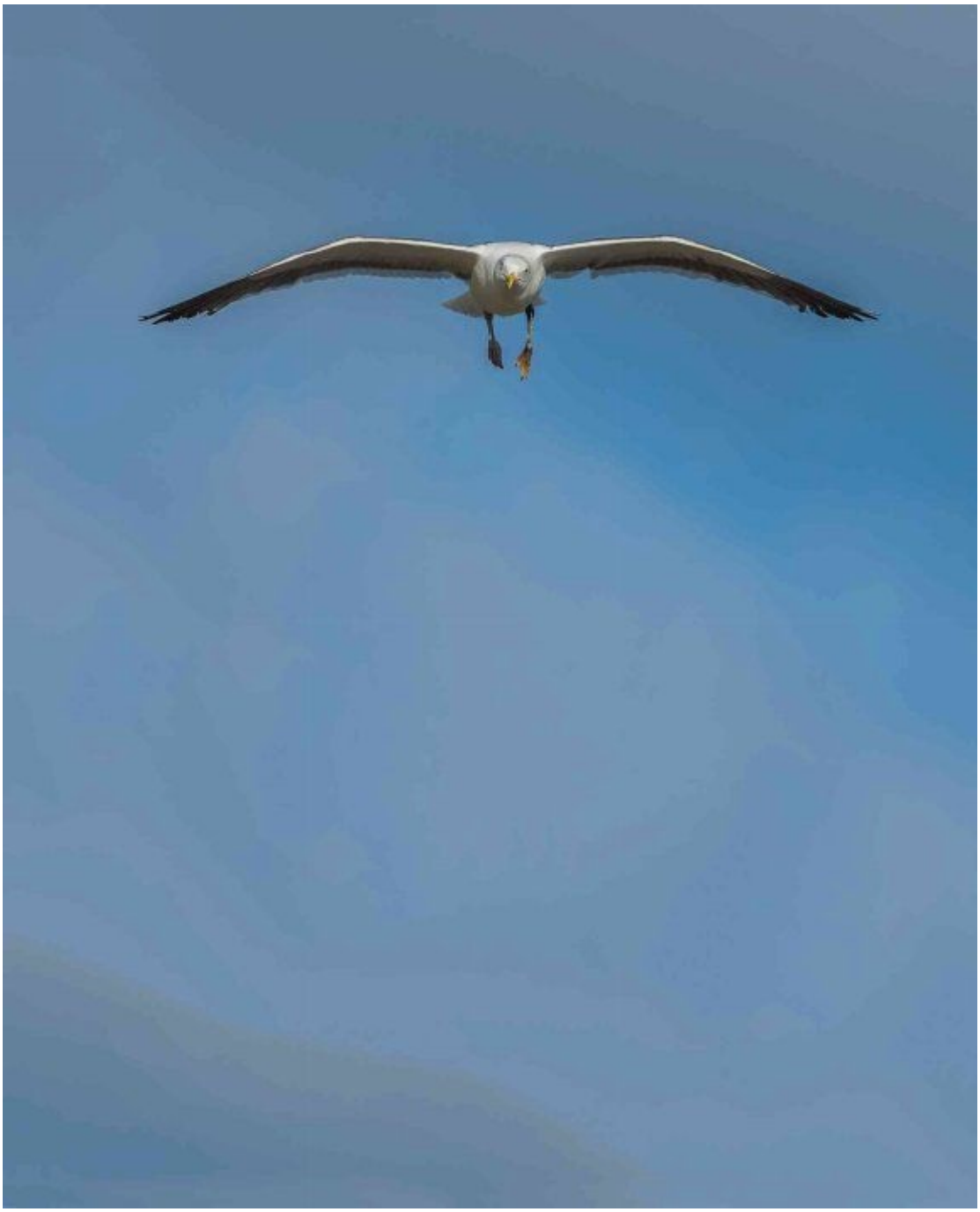
Image 273. Cormorant Creates Ripple Rings On A Lake

I was at the edge of Royal Palm Lake in the Everglades, standing next to a double crested cormorant. Suddenly, the bird took flight and pecked at the water, creating a large circular ripple in the water. Apparently he tried to catch a fish, but missed. So as he flew he pecked at the water again, and again, leaving a beautiful trail of circular ripples. Once I regained my composure, I aimed my trusty point-and-shoot zoom camera at the lake and bird. Had I been quicker on the draw, the bird would have been closer and larger in the picture and then we might have found out whether he eventually caught the fish.

Image 274. Western Gull Landing

After watching gulls take off and land, I finally captured an artistic pose. Although much of the bird’s white feathers are plagued with overblown highlights, the overall image is fairly successful.

Image 275. Gull Portrait In Flight



After having taken many successful images of gulls in various positions, I wanted to get a head-on flight image. Eventually I managed to add two successful ones to my portfolio. The wispy clouds in this image adds to the feeling of the gull gliding through the air.

Image 276. Ring Billed Gull In Flight

Image 277. Sanderling Landing On Marsh With Reflection

I have shown this image to many bird watchers. No one has been able to identify the species of this bird because there are so many similar types.

This was a misty day such that there is no demarcation between the marsh and the air. But the slight differences of the wings show that the reflection in this image is not merely a result of post processing manipulation.

Image 278. Tern Flying Over Lake

The composition in this image is interesting. I kept the camera horizontal so that the shoreline is horizontal, yet the tips of the bird's wings neatly fit at opposite corners of the image. With images such as 60, 237, 240, and 265, where there is no absolute frame of reference, I can rotate the subject to suit my compositional concept. In this image, however, I captured a sweepingly oriented subject against a contextual natural background. Lucky.

Although terns are smaller faster flying birds than the typical large wading birds such as herons, this bird was gliding. Therefore, I needed shutter speed of only 1/800 second to get a sharp image.

Image 279. Tern With Outstretched Wings

This image lacks background context, thereby giving artistic freedom of subject orientation. I gave the subject a dive bomb orientation similar to image 240.

This and the other tern images were taken at 1/2500 second. To freeze the action of these fast flying birds

This image was taken at sunrise which gives the subject a warm golden glow.

Image 280. White Balance Applied To Previous Image

Although I like the authentic dawn golden glow on the bird in the previous image, the sky color is very grayish and bland. By clicking on a daylight white balance selection in the raw processing software, the image suddenly has a light, bright, blue sky – giving the subject and the whole image a whole new feeling.

Image 281. Elongated Wing Of Tern In Flight

This image accentuates that feeling of dawn with the golden sunlight noticeably reflecting off his elongated right wing.

Image 282. White Balance Applied To Previous Image

As in Image 280, I applied a daylight balance in raw processing to create a more upbeat mood. The bright blue background causes his red-orange beak to really shine.

Image 283. Canada Geese Pair In Flight

Although these geese were fairly high above me, I used a telephoto lens which can have the effect of making it seem as if I was eye-level with the birds. Shutter speed was 1/640 second with an f/13 aperture.

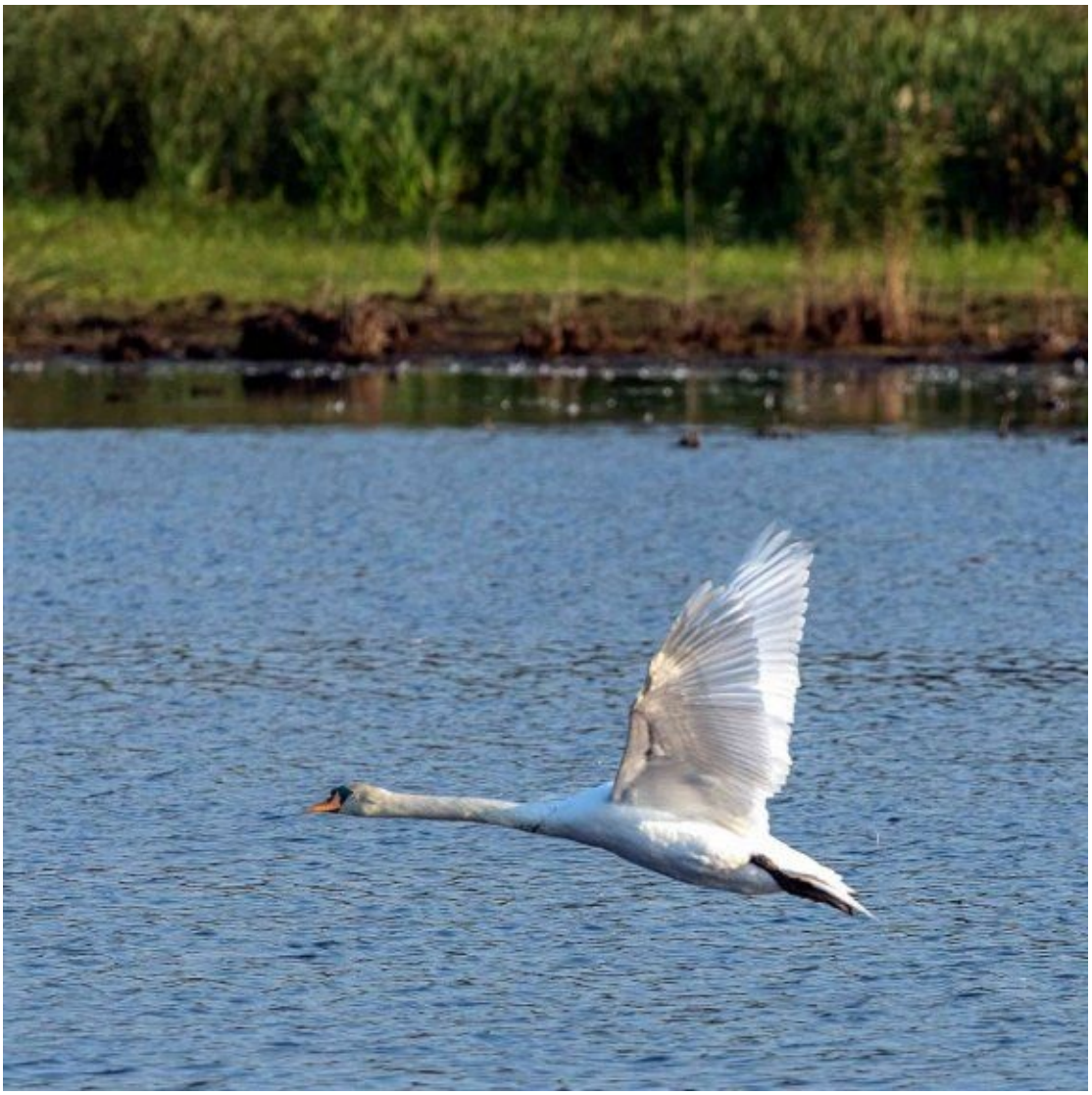
Image 284. Alternate Composition Of Previous Image

I feel that having both birds in full view does not necessarily add to the feeling of this image. Although having two or more subjects can add a dynamic feel and emotional interaction to an image, here I feel that can be achieved with a tighter composition. A benefit of this image is that you are better able to see detail in their faces and wing feathers.

Image 285. Snow Geese Pair In Flight

In contrast to the previous image, here the inclusion of both subjects really makes the image successful. The “A” wing configuration of the goose on the left, combined with the juxtaposition of the “V” wing position of the goose on the right creates a dynamic balance. There was a large flock of snow geese at the swamp. During the 2 hours that I stayed, the geese would suddenly picked up and fly from area to area, giving me many opportunities to try to capture a worthy composition.

Image 286. Swan Flying Over Lake



Here, as in image 278, I kept my camera horizontal so that the shore line is horizontal. Also the direction of the water waves provide a subject orientation context.

Image 287. Close-up Of Previous Image

This composition provides you with greater detail in the bird.

Image 288. Swan Landing On Lake

This fast action required a shutter speed of 1/2500 second. Also, I needed to utilize the fast frame per second (fps) that the camera is capable of. In a series of rapid fire images that I took, this image provides the best dynamic because the “tread marks” on the water surface communicates the action that just took place. I had noticed swans landing in this way and I kept myself ready to try to capture that specific action. Eventually I managed to do so.

Image 289. Yellow Crowned Crane In Flight

There are a number of zoos and amusement parks that have bird shows. At this bird show I was able to capture this flight. I used a 70-200mm lens hand held. Shutter speed was 1/4000 second, with an f/5.6 aperture.

Image 290. Alternate Composition Of Previous Image

Although having the trees and ground as a context for the crane flight, I always experiment with compositional possibilities.

Image 291. Close-up Of Previous Image

This close up enables you to see more detail of the head and feathers.

Image 292. Flight Of The Hawk

Whenever I would bicycle along the canyons in San Diego County, I would see hawks flying above. On sunny days their shoulders lit up bright red. So I decided to take time out on a few Sundays and set up my tripod along a canyon. Eventually I managed to get this hawk at 1/3200 second and f/5.6 aperture. I’m not sure whether this is a red shouldered hawk or a ferruginous hawk.

Image 293. Close-up Of Previous Image

This close up allows you to see the catch light in his eye. The dark green out-of-focus foliage makes a great backdrop for this bird.

Image 294. Green Striped Frog

When you realize that there are two eyes staring at you, you begin to realize what this is a picture of.

Image 295. Starry Eyed Frog

The ISO of 6400 caused this to be a fairly grainy looking image. I was able to post process the background to smooth out the digital noise. I was not able to do so with the frog itself however, because any such manipulation noticeably degraded the subject. Nonetheless, I feel that this portrait is a compelling image, even if it is not truly successful.

Image 296. Panamanian Golden Frog

This species of small frog is interesting because there are numerous different types of patterns of black spots and stripes, and each frog seems to have a unique pattern.

Image 297. Tree Frog

I had difficulty getting the entire frog in focus in this dimly lit exhibit. Therefore, I decided to focus on the toe pads. Thus, this is a picture of toe pads, with the out-of-focus frog providing context.

Image 298. American Bull Frog

This seemingly straight forward picture of a common frog at a pond took much time to capture because the direct sunlight was creating blown out highlights on the leaves and on the frog. I was fortunate that the frog stayed still for about a half hour as I moved from one vantage point to another to try to reduce the effect of the highlights. Eventually, there was a thin cloud that covered the sun partially and I was able to find an angle to get a well exposed image.

Image 299. Water Snake Portrait

I was at a beach photographing wading birds and shore birds when this water snake appeared among the rocks.

Image 300. Close-up Of Previous Image

Image 301. Oustalets Chameleon Profile

Image 302. Close-up of Previous Image

Image 303. Monitor Portrait

See the next image for a discussion of the merits of this image.

Image 304. Close-up Of Previous Image

This close up of the previous image shows that the nose and tongue are not sharp enough. I would have needed a smaller aperture than the f/5.6 that the camera had selected for this image. Either I should have raised the ISO, or, even better, I should have set the camera exposure mode to manual and selected auto-ISO in the camera's menu. Then I should have selected an appropriate shutter speed and aperture, and let the camera determine the ISO.

Image 305. Blue Fence Lizard

Image 306. Tortoise Portrait

Image 307. Close-up Of Previous Image

Image 308. Leatherback Sea Turtle Swimming

This was taken at an aquarium through glass.

Image 309. Alligator Portrait

I have vacationed in the Everglades twice, each time for 2 weeks. Thus, I have encountered many alligators, but only very few times has an alligator bared his teeth at me. This was one of those times – and I was able to get a straight-on portrait. An aperture of f/8 allowed the entire subject to be in focus.

Image 310. Close-up Of Previous Image

I feel that this close up composition has more impact and it includes all the really important aspects of the subject.

Image 311. Alligator Baring His Teeth

During this trip to the Everglades, I bicycled through various areas in the park. As I approached this alligator who was off to the side of the road, he suddenly awoke, took a few steps in my direction, and snapped at me when I was about 15 feet away from him. I stopped and took his picture with my point-and-shoot camera, but he had already closed his jaws.

Chapter 25. Bugs

Image 312. Bee Portrait

During a number of times when I was set up to photograph hummingbirds, bees would show up. This bee landed on a plastic protrusion that was part of a hummingbird feeder. I was able to select the background and apply just enough blur to eliminate digital noise, as I had done in image 295.

Image 313. Bee At A Purple Cone Flower

On this occasion, I used my macro lens to photograph flowers, and this bee conveniently came along. Hand-held, 1/4000 second.

Image 314. Close-up Of Previous Image

Image 315. Yellow Jacket Profile

Here again, I was set up to photograph hummingbirds. This bee is approaching the tips of a flower of a red bottlebrush tree. Shutter speed was 1/2500 second.

Image 316. Yellow Jacket Portrait In Flight

I had a nest of yellow jackets in my backyard that had to be dealt with. When the swarm of bees exited the nest in response to the chemical injected into the nest, I set up my tripod and telephoto lens. Of about 50 images, this one is unique and worth keeping. Shutter speed was 1/5000 second.

Image 317. Bumble Bee

I used my point-and-shoot zoom camera to take the photo.

Image 318. Cicada Profile

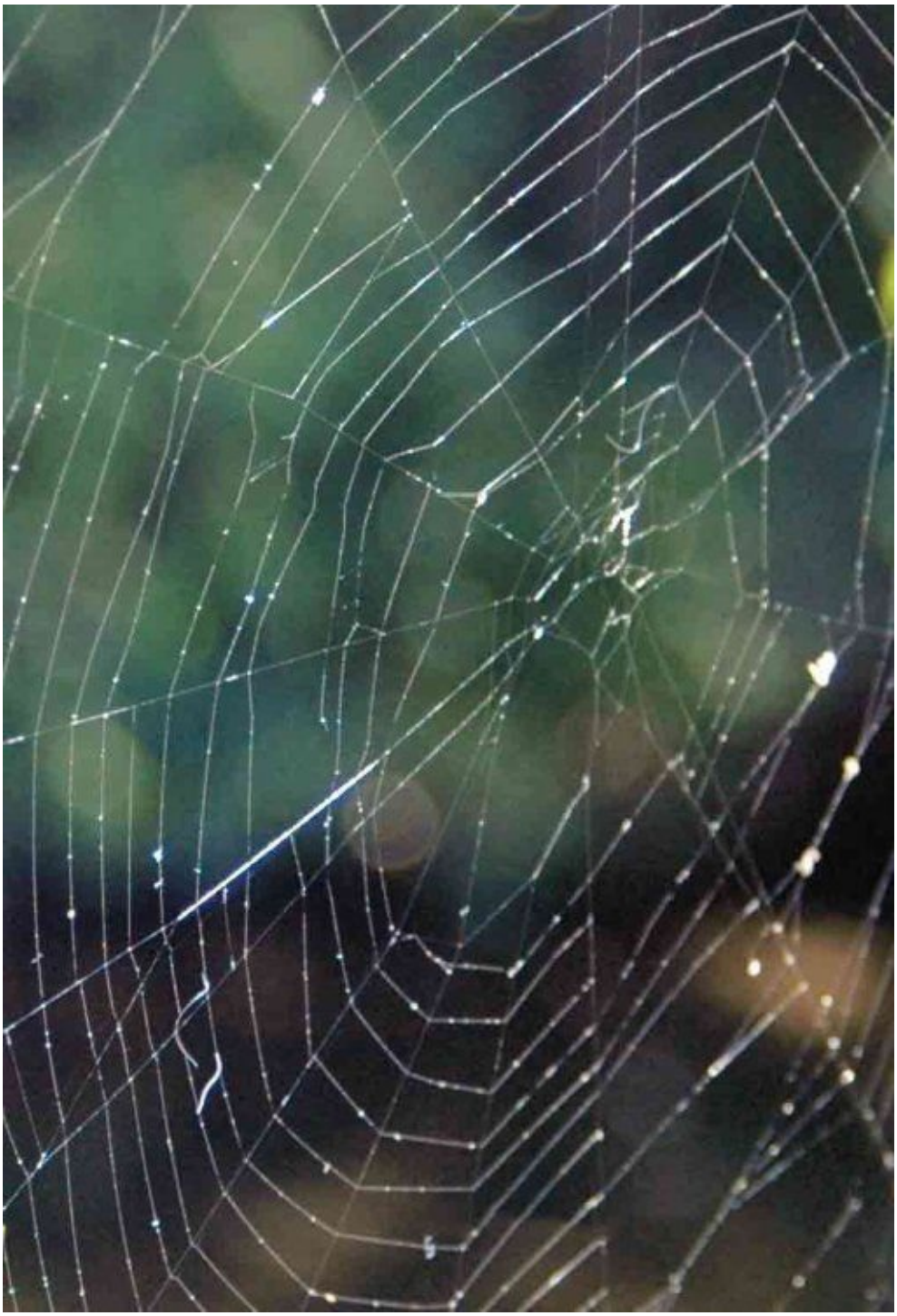
This species of cicada emerges from its larval stage every 17 years.

Image 319. Dragonfly Profile

Image 320. Golden Silk Orb Weaver Spider On His Web

These spiders are almost 2 inches across when their legs are extended as in this image. I was able to take this with my point-and-shoot zoom camera. Notice that the spider is in the process of building his web.

Image 321. Spider Web



These spiders are almost 2 inches across when their legs are extended as in this image. I was able to take this with my point-and-shoot zoom camera. Notice that the spider is in the process of building his web.

Image 322. Moth Caught In Spider Web

One morning I looked out my back porch window to see a freshly caught moth. He looked so serene I simply had to take his picture.

Chapter 26. Impressionistic Nature Images

Image 323. Sting Ray

This was taken at a local aquarium through glass. Although it is not sharp, the portrait pose showing his eyes makes for an interesting image.

The trend in nature photography is to have tack sharp images. But there are so many opportunities to create works of art that give the viewer an impressionistic experience.

Image 324. Turtle Swimming

At this exhibit at an aquarium, there were blue spotlights shining on the water. As a turtle swam by, I pressed the shutter of my point-and-shoot zoom camera. Shutter speed was one quarter of a second. Part of the beauty and fun of impressionistic photography is to have the viewer try to figure out what the subject is.

Image 325. Ringed Kingfisher In Flight

At a nature refuge, this kingfisher would hide among branches, then quickly dart to the lake to catch a fish. He would dart quickly back and hide again. This is the best image I was able to capture. It is blurry, yet I feel it communicates flight while retaining the ability to recognize the bird.

Image 326. Red Bellied Woodpecker

Small birds fly extremely fast, making it almost impossible to get sharp flight photos without some kind of motion detection triggering device. One of the nice things about this profile flight capture is that you can see his red belly for which the species is named.

Epilogue

Please visit my blog/web site gallery at bitmanNaturePhoto.com .

You can contact me at zbitman@aol.com (or the email address listed on my web site).

I provide prints as follows:

Up to an 8.5x11” high gloss print: $30.

Larger prints: We will mutually agree on a printer and specifics, including print size, orientation, aspect ratio, finish, board, matting, etc. You will know the price charged by the printer. I simply add $30 for the use of my digital file.

Glossary

Aperture - The opening of the camera's shutter. It's size is denoted as f/stops. An example of a large aperture opening is f/2.8. A very small aperture is f/22. A small aperture provides a larger depth of field.

Aperture Priority - Camera exposure mode in which you set the aperture.

APS - Sensor size that is somewhat smaller than a full frame sensor.

Aspect ratio - The ratio of the width and length of an image. A square image has a 1:1 aspect ratio. A 6:4 ratio is a popular size for small photos.

Ball Head – A tripod head with which you loosen a knob and can position the head in any and all directions.

Color Balance - Officially known as white balance. Typical settings are daylight, cloudy day, shade, tungsten light, fluorescent light.

Depth of field - The interval from near to far within which objects are sharply in focus. It depends on the aperture opening.

Digital Noise - Mottled areas in an image that result when there was not enough light to get a good exposure.

DSLR - Digital single lens reflex. This is a digital camera that has the basic form factor as film SLRs of the past.

Exposure Mode - Examples include shutter, aperture (also known as time), program, and manual modes.

f/stop - Size of the shutter aperture opening. A smaller number such as f/2.8 is a wider opening than a smaller number, such as f/11. The larger the number, the greater the depth of field.

Fisheye lens – An ultra-wide angle lens that can capture a full 180 degrees of obf the scene in front of the camera.

Focal length - A measurement of the angle of sight of a lens. A short focal length such as 20mm is an ultra wide angle lens. A typical wide angle lens has about a 35mm focal length. A telephoto lens might have a 200mm focal length.

Focus - The point at which objects on the sensor are sharp.

fps - frames per second. A greater number such as 10 fps is better able to enable you to capture fast action.

Full frame - A sensor size that matches the film of 35mm cameras. Typically about 24mm x 36mm

Highlights - Areas in an image that are white. Overblown highlights lose all detail in that area.

Image Orientation - Square, tall, or wide. Tall is also known as portrait or vertical orientation. Wide is a also known as landscape or horizontal orientation.

ISO - The light sensitivity of the sensor. Also known as the speed of the sensor. Higher ISO values, such as 1,000 enable you to take pictures under darker conditions. However, higher ISO values introduce a mottling effect on an image known as digital noise.

ISO Auto Set - A mode on a camera in which the camera will select the ISO needed to produce a proper exposure.

Gimbal Head – A tripod head whose base is on an axis that permits a lens mounted on it to tilt freely in from side to side and from high to low. It suspends and cradles a long heavy lens that would dangerously flop down on a ball head.

Head - A camera or lens support that mounts onto a tripod.

Lens Category - fisheye, ultra-wide angle, wide angle, normal, telephoto, ultra-telephoto, macro, tilt-shift (or perspective control) lens.

Macro - A mode of photographing a subject. A macro lens allows you to get close to the subject, typically within a few inches. A true macro lens is capable of a 1:1 image, meaning life-size. With a macro lens, an image of a penny, for example, will be exactly the same size as the penny itself. Some camera companies call it “micro.” Macro lenses will focus on far-away objects as well.

Manual Mode - Exposure mode in which you set both the shutter speed and aperture.

MB - Megabytes. Millions of bytes. This is relevant to the size of a digital file on a computer disk. It is not the same as MP.

MP - Megapixels. Millions of pixels. This is a measure of the number of dots on a digital camera sensor. The data from many pixels go into a single byte in a computer file.

Normal lens - A lens with a focal length of about 50mm when measured for a 35mm or full-frame camera.

Pixel - A point of resolution on a sensor.

Point-and-shoot - A type of camera in which the lens is permanently mounted.

Post processing - Manipulating a digital image using an application software. Examples are Photoshop and Lightroom.

ppi - pixels per inch. In a digital image file, it is the number of pixels contained in an inch. An image that has 300 ppi, and whose pixels are 10 inches wide, for example, can produce a 10-inch print pixel-for-pixel. You can change the ppi in a photo editing software application. A typical menu item for that manipulation is: Image > Image Size > Resolution.

Sensor - The digital panel that detects light and produces an image.

Sensor Speed - Also known as ISO.

Shutter Priority - Exposure mode in which you set the shutter speed and the camera will set the aperture to produce a correct exposure.

Shutter speed - is the length in seconds that the shutter remains open when making an exposure.

Tall Orientation - Orientation of an image or camera in which the side of the image is longer than the top.

Telephoto – A lens with a focal length significantly longer than a normal lens. A typical telephoto lens has a focal length of 135mm or 200mm.

Tilt-Shift Lens – A lens with which you can tilt the lens and/or shift the lens from side to side.

Tripod - A 3-legged support for a camera.

White balance - Also known as color balance. It is measured as the temperature of light. Different settings give a different color cast.

Wide angle lens – A lens with a focal length smaller than a normal lens, such as 35mm.

Ultra-telephoto lens – A lens with a focal length of 300mm or longer.

Ultra-wide angle lens – A lens with focal length shorter than a wide angle, for example, 20mm.

Wide Orientation - An image whose top is longer than its side. Also known as landscape or horizontal orientation.