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On the cover:
Getting a crisp shot of a moving bird is difficult—if not impossible—without the right camera. Birder’s Guide to Gear offers expert advice on this and other gear topics. Violet-crowned Woodnymph photo © Glenn Bartley
Over the past 18 months, I’ve sparked up a pretty serious interest in bicycling. I’ve owned various bikes for most of my life and generally ridden them just a couple times a year. But I’ve really geared up, if you will, having biked over 4,000 miles in the past year and a half.

As both my saddle time and my enjoyment of it have increased, I’ve found myself searching for practical, reliable tips I can use, both on gear and technique. And I can tell you how much I appreciate it when I find an authoritative article or blog post that really gives me advice I can use and doesn’t feel like a thinly-veiled sales job.

That’s exactly what we aim to give birders in the Birder’s Guide to Gear. Luckily, birding isn’t quite as intensive—usually—as cycling. But there is still an often-bewildering array of options for things like cameras, binoculars, clothing, and accessories. We aim to cut through the noise and tell you how to get the most from gear you already own and how to make decisions about potential new purchases that will leave you smiling, not crying tears of frustration.

Birders helping birders get more out of birding. It’s the heart of the ABA culture. If you find these Birder’s Guides helpful, please do two things. Join the ABA, if you’re not already a member, at aba.org/join, and share Birder’s Guide with others who will benefit from it. All issues are available for free online, at aba.org/birdersguide.

With a little help from the ABA, any birder can get more out of their gear, and their time in and out of the field.

Good birding,

Jeffrey A. Gordon
President, American Birding Association

Whether your gear is shiny and new or old and battle-scarred, the mission of Birder’s Guide to Gear is to help you get the most out of it. What exactly constitutes birding gear? Well, these days a camera is pretty common. And field guides...definitely field guides. Now expand your thinking a bit. What about smartphone apps? Luggage? How about shoes, even? This issue features information and expert advice on all of these topics. We want you to spend more time enjoying the birds—not worrying about aching feet or slow cameras.

Birder’s Guide only exists because our talented pool of ABA members is willing to share its knowledge. You can join in by writing an article. By the same token, we depend on our members to give us feedback about what they want—and don’t want—to see in Birder’s Guide. Take just a moment to share your thoughts with us, either via the email address printed above or by leaving a comment at aba.org/birdersguide.

Good birding,

Michael L. P. Retter
Editor, Birder’s Guide
The American Birding Association, Inc., seeks to encourage and represent the North American birding community and to provide resources through publications, meetings, partnerships, and birder networks. The ABA’s education programs develop birding skills, an understanding of birds, and the will to conserve. The ABA’s conservation programs offer birders unique ways to protect birds and their habitats.

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**Jessie Barry** helps lead the Macaulay Library and Merlin teams at the Cornell Lab of Ornithology. She is grateful for the ABA’s young birder programs, which helped her get her start in birding and launch a career focused on birds.

**Kristi Dranginis** is the founder of BirdMentor.com, a hub of resources and courses that help people around the world build confidence learning about birds. She is a contributor to the Dipper Project, which studies the effects of the Gold King Mine spill on the avian world. Kristi also leads birding courses and is a naturalist, herbalist, and professional photographer.

**Sherrie Duris**, known to many as Bird Girl, is an avid birder and nature photographer who originally resided along the shores of Lake Erie, where her love for birds began. She served as Vice President of The Toledo Naturalists’ Association and also conducted shorebird surveys and led field trips for Ottawa National Wildlife Refuge. Sherrie moved to Colorado in 2015 to pursue a passion in nature photography. She currently leads birding and photography tours in Rocky Mountain National Park and surrounding areas. Sherrie has recently expanded her wildlife and landscape photography skills to include night-sky, astrophotography, and time-lapse among them.

**Laura Kammermeier** is a writer, website producer, traveler, birder, and travel consultant. She is the creator and managing director of NatureTravelNetwork.com, which is a compendium of global nature travel resources to link travelers with great birding and nature hotspots, ecotourists, and qualified tour operators. She is also the sole proprietor of My Digital Nature, a web development and digital communications company specializing in nature and tourism clients. Laura is president of the Rochester Birding Association and a co-founder of the Ohio Ornithological Society, and she formerly led Project FeederWatch. She lives in Rochester, New York, with her husband and two children.

**Marcel Such** is a lifelong birder and competitive trail runner who hails from the land of Gunnison Sage-Grouse in the Rocky Mountains of Colorado. To balance his two passions, Marcel can often be seen birding without binoculars as he traverses long distances across the mountains. Marcel is a passionate advocate for birds and the environment, is involved with the ABA’s Camp Colorado for young birders, and is a senior at Western State Colorado University in Gunnison, Colorado, where he studies environmental biology and mathematics.

**Drew Weber**, Merlin Project Coordinator at the Cornell Lab of Ornithology, has been birding nearly his entire life. He enjoys combining his interests in technology and birds to teach people about birds while fueling some of his twitching tendencies. His current obsession is working on his “day lists,” a life list for a particular date (such as February 29).
Binocular designs are similar in principle, a series of lens elements are mounted in a plastic or metal chassis, with a focusing mechanism and a means of adjusting to each eye. The dramatic range in prices is directly related to the difference in the raw materials, intensity of craftsmanship, and labor involved in crafting each piece. Obviously, to make the least expensive products, major sacrifices need to be made. At the highest levels one can expect the finest components and workmanship culminating in a true lifetime product with superior performance and maximum enjoyment and eye comfort.

Manufacturing the highest quality glass is a long process, much like creating a fine wine. High-density materials, free of imperfections, allow light to be bent at extreme angles without distortion. These ultra-HD quality glass elements are typically heavier than lower quality glass due to their density. They often contain fluoride (among other elements) and in extreme cases are “slow-cooled” in pressurized chambers where the temperature is reduced slowly over weeks.

An individual tube may contain as many as 13 individual lens elements, each of which is multi-coated on both sides with dozens of individual layers all working together to reduce stray light, eliminate glare, and transmit the maximum amount of usable light. Our strong photographic heritage, including invention of the first 35 mm camera over 100 years ago, insures...
that Leica products will have the truest color neutrality; a difficult task with those hundreds of individual lens coatings!

Each lens element is hand-inspected after every process and accepted for use or rejected if imperfect. Skilled artisans couple mated lens elements by hand, matching complimentary pieces to balance tolerances, to insure that optical centers are perfectly matched. The edges are hand-painted with black paint in order to absorb any stray light; the inner barrels of the chassis are powder-coated with dark color; and multiple baffles are added to insure the purest light transmission possible. Individual elements are assembled and mounted by hand, and finally secured into the metal body with robust locking rings. The prism assembly is wrapped in a metal cage and suspended within the metal body without touching the sidewall, offering maximum impact resistance. These are but a few of the steps taken in a premium optic that insure superior performance and unparalleled product longevity.

The new Noctivid binocular, expertly engineered and hand-crafted by Leica in Germany, is the culmination of more than 150 years of optical prowess and represents the new pinnacle of optical performance. Still maintaining the legendary ruggedness and waterproofing for which Leica is renowned, the new Noctivid binocular offers close focus capability to 6 feet, has the highest light transmission across the entire visible light spectrum, and boasts an uncanny depth of field and ultra-wide field of view. Six years in the making, Leica’s new flagship Noctivid binocular is inspired by the Little Owl (Athene noctua) which sees as acutely be it day or night. Allowing one to see every detail within the darkest shadow, the Noctivid’s fast focusing system insures no bird remains hidden, or sneaks by undetected. Find out how you can try a Leica before you buy here:

us.leica-camera.com/Sport-Optics/Leica-Birding
If you are just beginning bird photography, or started out with a point-and-shoot camera and are ready to step up to the next level and take better-quality photos, this article will help shed some light on which DSLR (digital single lens reflex) camera types are better for photographing birds in action. Regardless of whether you are taking photos to share on social media or getting that urge to sell a few prints, the right camera can help you develop a nice portfolio of good-quality images.

Why DSLR?
Simply put, DSLRs produce higher-quality images. They have better sensitivity to light, they have faster shutter and focusing speeds, and they can take an array of different lenses from super-wide-angle to telephoto, depending on what you are photographing. Point-and-shoot cameras come in handy for simplicity, size, and price, but won’t produce a high-quality image in comparison to a DSLR.

With so many DSLR cameras available and new ones coming out all the time, it can be a daunting task to figure out which to buy. Fortunately, there are plenty of good photographers out there who specialize in photographing birds, and they have plenty of experience with different types of cameras. They can offer advice on the
best cameras for photographing birds in flight or what works best for stationary birds and landscapes.

Here I discuss two full-frame and two crop-sensor DSLR camera models by Canon and Nikon that are commonly used in wildlife and landscape photography; they start in the middle price range and up. There are lots of other good camera brands and models, but I reference the four models and two brands that I am familiar with to give you an idea of the features to look for. I also include some pros and cons of each type of camera.

The Importance of Burst Rate

It takes skill and practice to become a good bird photographer. If you have been out in the field long enough, you have probably witnessed some amazing bird behaviors, and a high-quality, fast-shooting camera would have come in handy. DSLR cameras that are capable of faster continuous burst rates are best for fast-moving birds and other wildlife, but equally important is the number of frames that can be stored in a single burst.

A single burst is the number of consecutive shots that a camera can continuously take when you press and hold the shutter release button, before it slows down dramatically or stops shooting. During high-speed shooting, the camera stores images quickly in a buffer memory, then writes them to the camera's memory card. The camera's burst rate is determined by how fast the image files can be written and how large the buffer space is. Also important to consider: the processing power of the camera, whether you shoot RAW or JPEG formats, the size of the file, and if you are using a faster memory card, which I will explain later.

A fast burst rate, coupled with a large number of frames that can be stored in each burst, gives you a better chance of capturing the perfect action shot, such as a Bald Eagle swooping down to grab a fish out of the water or a pair of Bald Eagles locking talons in mid-air.

Imagine standing in a remote area with several photographers lined up watching a Great Gray Owl perched in a tree from a distance. The owl suddenly spots a vole on the ground about 10 yards away and quickly flies toward the ground to capture it, then flies back to his perch with dinner. This is an instance where having 10 or more frames per second and a high burst rate yields more photos and more chances to capture that split-second shot of the vole in the owl's bill.

Slower-shooting cameras that shoot five or six frames per second (fps) may still be buffering an image and writing it to the memory card while the faster camera has already captured the shot. This can leave a photographer frustrated, having missed that opportunity for a once-in-a-lifetime shot. However, the full-frame camera may have captured a better-quality image.

Pros and Cons of Full-frame Camera Models

Let's take a look at a few DSLR full-frame camera models. A full-frame DSLR from Canon or Nikon has a sensor that's the same size as a frame of traditional 35mm film, measuring 36x24mm. A full-frame sensor has over 2.5 times the surface area of a crop sensor. It comes at a premium price, is typically larger and heavier, and may be uncomfortable to carry on longer excursions. Full-frame cameras are high in quality, with better dynamic range and performance in low-light conditions. Because the pixels are larger on a full-frame camera, they can gather more light and do a better job at higher ISO settings.

Birds are active in the early mornings and evenings when light conditions may not be ideal, requiring a higher ISO. If you want to capture movement without blur, a faster shutter speed is necessary. Raising the ISO allows enough light to reach the sensor so you can increase the shutter speed and still get a good exposure. A full-frame camera yields a smoother, less-grainy image using higher ISO compared to a crop-sensor camera when lighting is not the best. A full-frame camera really pays off in low-light conditions.

The Canon EOS 5D Mark IV, which shoots seven frames per second, and the
Nikon D810, which shoots five frames per second, are excellent for stationary birds or landscapes, especially using a tripod. But they may fall short in the speed category compared to a Canon EOS 7D Mark II or a Nikon D500 for capturing that critical frame at the precise moment that matters most in a series of consecutive shots.

**Pros and Cons of Crop-Sensor Models**

When using an APS-C (Advanced Photo System type-C) camera, the sensor crops out the edge of the frame, which is advantageous when shooting distant subjects because the sensor gives the impression of an increased focal length. Let’s compare cameras to see how that works. A Nikon DX has a crop factor of 1.5, whereas a Canon APS-C has a crop factor of 1.6. Because this sensor is 1.6x smaller than a full-frame and/or 35mm film camera, it shows an area equivalent to the area shown by a lens 1.6x as long on a full-frame camera. In other words, a 100mm lens on a Canon APS-C camera shows the same area of view that a 160mm lens would show on a full-frame camera, or a Nikon DX with a 1.5x crop factor shows the same area of view that a 150mm lens would on a full-frame camera. When pairing the Canon EF 100-400mm Mark II lens with a Canon EOS 7D Mark II APS-C camera with the lens extended out to 400mm, it would be as if you were shooting at 640mm because of the 1.6x crop factor.

Crop-sensor cameras typically are more affordable, are lighter, and magnify a telephoto lens, which comes in handy when photographing distant birds. Canon’s crop-sensor EOS 7D Mark II and Nikon’s crop-sensor D500 both shoot 10 frames per second, but the Nikon D500’s settings allow for up to a 200-RAW-image buffer depth compared to 31 for the Canon EOS 7D Mark II. Raw image buffer depth is the capacity at which unprocessed raw data can be stored before it is written to a memory card in its original form; or, in simpler terms, continuous shots allowed.

**RAW Versus JPEG**

The RAW file format records all the image data from your camera’s sensor uncompressed and unprocessed. This gives you the highest level of quality and detail if you are interested in printing your images. Shooting RAW gives you more control when editing over- or underexposed photos. JPEGs are processed and turned into their final format before being placed into your camera’s buffer memory. Because of this, the number of shots taken in continuous shooting mode can be increased by reducing the image file size. Since image information is lost and compressed in JPEG, it is recommended to shoot in RAW if you want better image quality and more control in post-process editing.

**Camera Cards**

Speed also depends on how fast the camera card is. Both crop-sensor camera models I mention offer two different memory card slots to record image data. The Canon EOS 7D Mark II has a slot for an SD (secure digital) card and a CF (compact flash) card. SD cards are used in most digital cameras, primarily in point-and-shoot cameras and secondarily being used in professional DSLR cameras. CF cards yield higher speeds and higher capacity than SD cards. This is the reason why CF cards occupy the primary card slot in professional cameras. The Nikon D500 has an SD card slot and an XQD card slot. The XQD is faster and specifically for high-resolution digital cameras. These considerations make a difference in capturing a once-in-a-lifetime shot, rather than storing another image on a hard drive somewhere never to be seen again.

**Shooting Modes**

Now that you have an idea of what full-frame and crop-sensor cameras are, can you just grab the camera and start shooting? Not so fast.

The burst mode, also called “continuous shooting mode”, is an optional feature on most cameras that has to be selected before you can use it. Most cameras have two main drive modes,
single and continuous. You want to select the continuous mode so that when you press the shutter release, your camera will fire off continuous shots until you lift your finger and press it again. In single-drive mode, pressing the shutter release takes one shot but won’t take any more shots until you lift your finger and press it again.

High-Speed Continuous Shooting mode is your camera’s fastest shooting speed, giving you the maximum number of frames per second as you press and hold the shutter release. Low-Speed Continuous Shooting mode is also fast but not as fast as High-Speed. There are other shooting options, but I won’t go into them here. If you plan to photograph birds that are moving around, you want your camera’s shooting mode to be set at High-Speed Continuous Shooting. In Single Shooting mode, you might miss an incredible action shot because you’re able to shoot only one photo at a time. I have made this mistake in the field many times. It is imperative to have your camera ready while photographing birds.

The Single Shooting mode has its advantages when shooting stationary birds or landscapes. Pressing and holding the shutter release in High-Speed Continuous Shooting mode can yield unusable photos in a series that take up too much space on a memory card and/or hard drive. Not only that, but cameras have a life expectancy just like cars. Camera manufacturers publicize the shutter rating of the camera. Actuations (or shutter count) is the amount of photos your camera has taken; if you ever buy a used camera or try to sell one, knowing the shutter count is comparable to knowing the miles on a car.

I recommend that you read your camera’s manual and familiarize yourself with the drive modes and where they are located. On Canon cameras, the High-Speed Continuous Mode is an icon that looks like stacked rectangles with an H next to it. It can be changed on the top of the camera’s LCD display on the right or in the menu options on the LCD screen. On Nikon cameras, the High-Speed Continuous Mode is on the left dial marked with a C (with an H next to it).

**Speed, Light, and Settings**

A real-life example shows how speed, lighting, and settings work together. I recently visited a store in Glen Haven, Colorado, where hummingbird feeders around the property were frequented by a dozen or more Broad-tailed and Rufous hummingbirds. It was a perfect place for me to practice photographing birds.

The ABA Area’s hummingbirds average around 53 wing beats per second in normal flight. Because I was attempting...
to capture the wings without blur, I used a super-fast shutter speed of 1/5000th of a second. In order not to underexpose during cloud cover, I had to increase the ISO to keep the higher shutter speed. After about an hour of practice, I finally captured a sharp photo in High-Speed Continuous Shooting without too much blur to the wings. During this time, I also practiced adjusting my settings (ISO and shutter speed) without taking the camera away from my face. I continued to look through the viewfinder and adjusted the settings to match the conditions. I became familiar with the dials and buttons on my camera to help with the quick-action shots. This is an important step in bird photography. Get to know your camera and where to adjust settings without pulling the camera away from your face. Those split seconds count in high-speed action.

**Focusing**

Now that you have a basic understanding of the drive modes, you’re ready to tackle the camera’s focusing system. While photographing birds, it is important to keep the bird in focus while it is moving. There is nothing more frustrating than taking a series of photos only to find out none of them were in focus! When shooting fast-moving birds, set your autofocus to Continuous Focus mode. The setting is AI Servo on Canon models and AF-C on Nikon models. This mode is a must for keeping a moving bird sharp within the viewfinder as you track your subject. When you press the shutter button halfway while in this mode, the autofocus tracking system engages and attempts to keep your subject in focus as it is moving. Both cameras also have a single shot focusing mode, Canon’s One Shot and Nikon’s AF-S, which is used for stationary birds or landscapes.

**AI Focus mode on a Canon is meant to work when your subject is stationary at first but begins to move, such as a bird that is perched and starts to fly.**

**So Which One Do I Choose?**

Selecting the right camera body for you will depend on your budget and what you want to accomplish. If you like the idea of speed, consider the faster-shooting cameras. If you aren’t that interested in speed and plan to use your camera for landscapes, consider the full-frame camera models. In the end, whatever you decide to buy should be something that you are comfortable handling and that gives you satisfying images. The models and cameras described here can produce some amazing images. It is up to you to capture that once-in-a-lifetime shot!

The Canon EOS 5D Mark IV, which shoots seven frames per second, and the Nikon D810, which shoots five frames per second, are excellent for stationary birds or landscapes, especially using a tripod. But they may fall short in the speed category compared to a Canon EOS 7D Mark II or a Nikon D500.
For certain subjects, slow shutter speeds work better. To get the best results in photographing the Milky Way, for example, using a tripod is a must. Having a remote shutter release for your camera will help eliminate vibration that may cause blur in a long-exposure photo. I recommend using a fast, wide-angle lens of f/2.8 or less, a shutter speed of 20 to 30 seconds and an ISO of 1600 to 3200 or more. This is where having a full-frame camera that performs better with higher ISOs comes in handy. Using a higher ISO will yield more detail in the Milky Way’s core and your stars will be brighter.

Waterfalls are also fun to photograph, where you get a nice blurred motion to the water. Again, using a tripod is a must when you are photographing at slow shutter speeds or low light. The longer the shutter speed for photographing the waterfall, the smoother the water appears. However, to compensate for lighting, you also have to adjust your other settings to get the desired effect. Direct sunlight or a bright day will yield a higher shutter speed and therefore less blur to the water. Some photographers purchase neutral density (ND) filters to reduce the amount of light entering the lens. This allows them to use a longer shutter speed in brighter conditions and still obtain the effect of smooth water.
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**SF 8 × 42**  The classic configuration brings birds eight times closer and is paired with the exceptional light gathering of a 42mm objective lens. The wide field of view, ensuring comprehensive coverage; and the bright image provided under any lighting conditions, make the SF 8x42 the most popular Zeiss binocular model.

**Victory SF Series**  It may go without saying that a top line Zeiss binocular will produce a superb image. But what makes this possible? Decades of continuous improvement and field work have delivered a consistent advantage to the lucky Victory SF user. The new Ultra-FL lens system allows for natural color rendition and exceptional light gathering, important for the less-than-optimal lighting birders regularly encounter – whether harsh midday shadows or dim understory at dusk. The edge-to-edge wide field of view with Field-Flattener technology brings the experience nearer to the natural view of the unaided eye, yet with the magnification power and clarity of premier optics. And the close focus of less than five feet makes for memorable encounters with cooperative birds, butterflies and bugs.

Discerning birders know that the binocular should feel comfortable in the hand, as if an extension of the arm. The luxury of comfort might seem frivolous until you hold the Victory SF and experience for yourself the ease of handling, but once you feel the benefits of the ErgoBalance system you’ll be a convert. The sturdy and durable coating completes this package for a binocular that feels absolutely graceful and effortless to use for long days in the field.

Birding with Zeiss Victory SF Series binoculars is about more than the quality of the image. It’s about the quality of the experience.  

**Learn more at aba.org/zeiss**

**SF 10 × 42**  For birders seeking the ultimate in handheld magnification while retaining precision clarity, the SF 10x42 provides a comfortably balanced glass and the brightest image in class. Higher magnification calls for steadier hands, and ErgoBalance delivers the premier handling needed.
Imagine: You arrive in Honduras, wondering which species of ant-birds are most likely nearby, wishing you could ask other birders what they’ve seen there. You pull out your smartphone with the Merlin ID app and instantly have access to all this expertise in the form of a short list of the antbirds observed in the area.

Perhaps you are in New Jersey and glance under your feeders to see an unusual sparrow in a flock of White-throated Sparrows. You put the colors, behavior, and location into Merlin, and realize you have your first Harris's Sparrow!

Or, you’re a school teacher in Mexico peering out the window with your students, introducing them to birds for the first time. You snap a photo of a gaudy bird on the ground…and instantly they learn it’s a Yucatán Jay.

Just imagine if anyone could tap into the collective knowledge of the birding community to make identifying birds just a little easier. What could change if more people knew the names of the birds they were seeing around their home and began to care about their feathered neighbors?

Merlin’s goal is to demystify identification, enabling anyone to identify the birds

Antbirds reported in late August near Gracias a Dios, Honduras.

Bicolored Antbird. Photo © Matt Deres
Merlin Bird ID

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around them. At the Cornell Lab of Ornithology, we develop tools aimed to transform the way in which people of all skill levels interact with birds. The best part is that the free Merlin Bird ID app is possible because of you: your contributions of sightings, photos, and sounds to eBird and the Macaulay Library.

With eBird data, Merlin is able to synthesize data from experienced birders to help new birders get started. That said, Merlin isn’t just for beginners. New features and Merlin’s regional expansion are increasing the utility of this app for experienced birders, too.

What Makes Merlin Tick: eBird

When we were first brainstorming the idea of creating a bird app at the Cornell Lab, a lot of time and effort was spent thinking about how expert birders identify birds.

Sure, what a bird looks like is very important to identifying it, but equally important is understanding status and distribution—when and where a particular bird is expected to be found—something that takes years of intense birding to grasp. With birders submitting millions of sightings to eBird, it is now possible to create an app that can simulate what an expert birder in any region intuitively knows—which species of birds are likely to occur at a given date and location. Likelihood of occurrence is arguably the biggest deciding factor for most bird identifications.

In Merlin’s step-by-step identification feature (found via the Start Bird ID button), status and distribution information plays a key role; the first questions Merlin asks are about the date and location for the bird you are identifying. With the provided date and location, Merlin pulls in the species reported nearby by your fellow birders. This list of expected species is combined with information on color, size, and behavior to return a short list of birds for you to consider.

Automatic ID of Bird Photos

Ten years ago, who could have imagined that your phone could identify peeps, sparrows, and gulls? Computer vision and machine learning technology are becoming part of our everyday lives, and these technologies are becoming part of birding.

Merlin has built-in computer vision algorithms that offer identification help for more than 1,500 species. Give Merlin a photo, and in just a couple seconds—without an internet connection—Merlin will give you an answer!

In 2012, the Merlin team began a collaboration with the Visipedia team—computer vision researchers at Caltech and Cornell Tech developing algorithms to automatically analyze images and extract knowledge from the visual world—to take on the challenge of teaching computers to identify birds in images. The first tests yielded only 18% accuracy. Today, on the same dataset, accuracy is over 90%.

These improvements come thanks to recent breakthroughs in the field of machine learn-
ing and new tools from Google. We’re now in the era of deep learning—a type of algorithm inspired by the structure and function of the brain—with access to amazing technology that allows anyone to translate text by pointing their smartphone at it or self-driving cars to read road signs, and we can harness these same technologies to identify birds. The team at Cornell is now able to develop software that once required specialized computer vision researchers and then package this software so it can operate on mobile devices without an internet connection.

How does photo ID work? Explaining exactly what the computer “sees” in a photo is something expert researchers couldn’t answer. The basic answer is that the computer learns what each species (and the various plumages) looks like by processing millions of images. Training Merlin takes about a week of computer processing time. Results are best with at least 100 images of each species, although 1,000 or more is optimal.

The Photo ID feature is possible because of the community of birders who contribute images to eBird, which are archived in the Macaulay Library. As more images of a broader range of species are contributed to eBird, we will be able to add more species to Merlin, improve accuracy for species already covered, and apply this technology to more use cases.

Explore Birds Near You
With Merlin’s Explore Birds feature, you can tell which birds you are most likely to see—anywhere in the world. This makes learning and identification more efficient, because you can rely on the collective expertise of thousands of birders to narrow down the possibilities.

Perhaps you are on a trip to Lake Yojoa in western Honduras and you have your field guides on hand, but you are planning a long hike and don’t want to drag along anything heavy. Open Explore Birds in Merlin, search for your location and date, and you’ll be ready to go with a shortened list of species that you might encounter, all powered by live eBird data.

These custom bird lists are available for any location in the world, and for species covered by the Bird Packs you are just one tap away from identification hints, images, and sounds for each species.

Thanks to millions of eBird observations, Merlin can sort the species in the list by frequency, calculated by the percentage of complete checklists that report a particular species. The “Most Likely” sort shows the most commonly reported birds at the top and the rarest at the bottom of the list—an excellent way to get a quick idea of which birds you might expect to encounter on a short walk around. You should be able to find many of the species that aren’t marked with an uncommon or rare tag.

The “Family - Most Likely” sort is our recommended option for most birders. This keeps families in the expected order, with waterfowl at the top, while sorting by frequency within the family headings. You get important clues about which birds you are most likely to encounter, showing species like American Kestrel and Peregrine Falcon above Gyrfalcon (unless you are one of the lucky few living where Gyrfalcons are common!).

It’s a Community Effort
The real magic of Merlin lies in the countless checklists submitted to eBird, improving the suggestions Merlin offers each passing day. The images and audio featured for each species are pulled in from media uploaded to the Macaulay Library, also through eBird checklists. Birders all around the world directly contribute to the success and accuracy of Merlin every time they enter data in eBird.

Merlin’s Photo ID feature similarly is a community effort, benefiting from
the growing archive at the Macaulay Library that portrays birds across their geographic range, from all angles, and in all types of habitats. Yes, that Dark-eyed Junco you photographed under your feeder is a unique and valuable addition to the Macaulay Library, for many reasons and not just to train Merlin Photo ID. The accuracy of the computer vision system improves with additional images of a species, emphasizing the importance of adding photos of even the most common species to your checklists.

**The Future of Photo ID**

The potential for computer vision to support birding, ornithological research, and conservation is huge. One can imagine a not-so-distant future in which you can select a photo of a flock of shorebirds, and Merlin will suggest that there are 8 Sandpipers, 4 Least Sandpipers, and wow, you should really check out this particular individual because it matches highly with Little Stint and that is very rare in this area! And with Merlin ID tips and images as reference, a birder can research the identification in the field and quickly get the word out.

In the near term, this technology can provide additional layers of data quality review to images uploaded with eBird checklists. Images are sometimes accidentally uploaded to the wrong species in eBird, and it would benefit everyone if we could catch this while you are creating a checklist. Imagine if eBird could alert you when a computer vision system indicates that the photo you uploaded to the Carolina Chickadee entry
is actually a Carolina Wren (happens all the time!) and allowed you to make that change before you submitted the list.

As we work towards harnessing computer vision for ornithology and birding, you can help by performing annotation tasks to advance current research questions. Visit MerlinVision (merlinvision.macaulaylibrary.org) to draw tight boxes around the bird in each image. This will help train Merlin to both find and identify birds in a photo, an important step towards being able to provide counts and multiple species IDs in one photo.

We can foresee a day when Merlin and other advances in technology offer assistance in the field, help solve conservation challenges, and engage a broad community in watching birds. In many ways, those days are here. What you can do today with the Merlin app can already help any level of birder.

Merlin allows you to tap into the collective wisdom of hundreds of thousands of birders around the world to identify unfamiliar birds and explore lists of likely birds for any spot on the globe in a matter of seconds, right from the field. Join us in sharing Merlin with others and contributing to growing the biodiversity archive that is eBird. Together we can excite a global community to participate in our passion for birds.

Merlin is free to download for iOS and Android devices, and it is available in Spanish and English at MerlinBirdID.com. Check out Bird Packs for the ABA Area, Mexico, Europe, and additional regions today.

Acknowledgments

Thanks to Ian Davies and Cullen Hanks for comments on earlier versions of this article. Merlin® would not be possible without support from the National Science Foundation, Faucett Catalyst Fund, Visipedia, Google Focused Research Award, supporters of the Cornell Lab of Ornithology, and the global community of eBirders. To all of you, thank you!
If you’re looking for birds, look no further than to Caligo Ventures and the Asa Wright Nature Centre!

There is no better introduction to birding the New World tropics than a trip to Trinidad and Tobago. Our line-up of autumn and winter tours allow unparalleled access to some of the world’s most beautiful birds. Just to highlight a couple:

Christmas Week at Asa Wright Nature Centre
December 20 – 26, 2017
With Trinidad Piping-guan extension Dec. 26 – 28, 2017

Trinidad & Guyana Birding & Nature Tour
March 9 - 23, 2018

Learn more at caligo.com or call 800.426.7781.

BRANT ALWAYS GIVES 110%.
100% for you and 10% for nature.

BRANT nature tours gives 10% of every dollar right back to the places we visit. Donations go to local conservation and education efforts to empower the people in the communities that host us.

Speaking of giving, if you mention this ad we'll give you $250 off your first trip with BRANT.

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CUBA BIRD SURVEYS
With David Sibley (December 2017) & Pete Dunne (April 2018)

Caribbean Conservation Trust—the Cuba Experts—have provided high quality Birding and Natural History experiences in Cuba since 1996!

All programs are 100 % legal for U.S. Citizens, and contribute to bird conservation in Cuba.

We offer multiple departures for birders of all skill levels, including private trips.

Contact Gary Markowski at cubirds@aol.com, or go to www.cubirds.com
The Sole of Birding: Footwear
Birders spend a lot of time outside. It’s what we do. At times, we are blessed with perfect conditions as we take a pleasant morning stroll through our favorite patch. However, we are also subjected to the whims of Mother Nature as we follow our passion. We brave blistering hot days in search of Central American vagrants to Arizona, windy and wet pelagic trips out of New England for unusual petrels, soggy marches through sawgrass saltmarshes in search of rails in Texas, and frigid mornings squatting in a blind for distant views of Gunnison Sage-Grouse in Colorado. Staying protected and comfortable through all these varied birding conditions is nothing short of an art form.

As an avid trail runner and lifelong birder, I can tell you that one of the most necessary yet overlooked pieces of gear in any birder’s collection is near and dear to my heart: shoes. Those bits of rubber, fabric, leather, and laces that protect our feet are incredibly varied and designed to keep our feet protected and even stylish in a variety of conditions.

Unfortunately, there is not a single shoe that works for everyone in every situation, nor will there be in the near or distant future, hence the driving necessity for this guide.

With the rate at which shoes are updated, I will refrain from recommending or reviewing specific models. Otherwise, there is a very strong chance that this article would be rendered obsolete before any of you are driven to add to or replace any of your footwear. Instead, I aim to provide an overview of the variety of shoes available, weigh their relative
We depend on good footwear to get us into and back out of the field comfortably.

Photo © Raymond VanBuskirk

Footwear

We depend on good footwear to get us into and back out of the field comfortably. This article should assist you in your quest for the perfect birding footwear.

Getting Dirty

Hiking boots are a durable and reliable option for birders of all types and ages, and a brief survey of nearly any local bird walk will show these to be the primary footwear. With their excellent ankle and foot support, aggressive tread, and relatively comfortable footbed, it is easy to see why this is the case. Boots do an excellent job of keeping your feet safe and relatively dry across the different terrains and environments we visit over the birding year. With the huge variety available, a brief overview of the options is in order to help you find a pair that meets your needs.

The first and most obvious thing to consider is the boot material: leather versus synthetic. Leather boots have been a mainstay among the outdoors community for decades. With its natural water resistance and toughness, leather is still one of the best available materials for keeping your feet safe and dry across nearly all possible birding conditions. There are downsides to this material, however, with leather being a rather unbreathable material, not to mention its accompanying large price tag and the potential ethical dilemmas associated with the purchase of cow or ox leather.

With the recent advent of durable, high-tech materials, synthetic boots really do meet and often surpass the classic leather boot in many regards. First, they
tend to be far cheaper than the leather alternative, although they generally do not last as long. Second, the material’s breathability is superior to leather, though it offers less protection against cactus spines, cheat grass, burrs, and the fangs of venomous snakes. In general, I would argue that synthetic hiking boots are the superior option over leather for the vast majority of birding exploits, though in the end this decision comes down to personal preference and taste.

**Strap Yourself In**

There are situations which may result in the desire for a shoe that offers superior ventilation at the cost of some protection: a sandal! Sandals truly are a great shoe for birding. Quick-drying and comfortable, sandals can be worn nearly anywhere one does not have to contend with biting insects, cold, or walking tender to be far cheaper than the leather alternative, although they generally do not last as long. Second, the material’s breathability is superior to leather, though it offers less protection against cactus spines, cheat grass, burrs, and the fangs of venomous snakes. In general, I would argue that synthetic hiking boots are the superior option over leather for the vast majority of birding exploits, though in the end this decision comes down to personal preference and taste.

**Hitting the Trail**

An alternative to the standard hiking boot is the trail running shoe. Relatively new to the market, trail running shoes have achieved much wider recognition and use in recent years. What this shoe lacks in robustness and ankle support, it more than makes up for in general comfort. With their light, ergonomic builds and fantastic tread, these shoes can promise your feet less soreness compared to a day hiking in a normal pair of boots.

For those looking for that extra something to make their long hike to Boot Spring for their ABA Area Colima Warbler a bit less intimidating, a trail running shoe just might be the perfect investment. I can recommend taking a look at Salomon, La Sportiva, Brooks, Saucony, and Altra.

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Footwear

through thick, prickly vegetation.

Choosing a sandal for your birding adventures is straightforward. Want some protection for your toes? Buy a pair of Keens or a knockoff brand of closed-toe sandals.

Want your toes to breathe? Chacos or Tevas are the way to go. The transition to exposing your feet in a pair of sandals may be intimidating, but the comfort and simplicity may well prove to be just what you are looking for.

Sandals particularly shine in circumstances that have you frequently wading through creeks or other water features. If you find yourself in these situations, a pair of water shoes is well worth the investment. Obviously, common sense must

be taken into account in your decision to wear sandals on any particular outing, as the lack of protection may often prove to be unwise or downright dangerous in many of the places we birders visit.

Specializing: Snow and Muck Boots

Cold mornings in a blind or walking around city parks in mid-winter during your local Christmas Bird Count may require something a bit different than you might wear the rest of the year. Snow or pack boots are thicker, taller, and warmer.
A relatively new option for birders, trail shoes provide a comfortable, lightweight alternative to a standard synthetic hiking boot. Photo © Marcel Such

A comfortable and reliable sandal option, Chacos are especially popular with younger birders. They can even be worn with socks for those daring enough! Photo © Marcel Such

Good footwear is especially important in rocky, uneven terrain. Photo © Raymond VanBuskirk
Proper footwear is important for the author on his frequent hikes across the alpine terrain of Colorado.

A standard choice for many birding opportunities, synthetic hiking boots can generally be spotted on any local field trip or rarity stakeout.

Footwear

than standard hiking boots, keeping snow out and some measure of heat in.

In choosing shoes of this type, carefully evaluate their comfort and warmth. Combining a nice, thick pair of boots with a thick pair of wool socks can be a life saver if you are sitting still in a cold blind or hunkered down on the side of a snow-blown road striving for that perfect Snowy Owl photograph.

On occasion, we are driven to trapse through standing water and marshland in search of rails and other marsh birds or even just to get from one point to another. Muck boots and hip waders are the key tools for making such an endeavour more enjoyable. The key is to find a comfortable boot that is totally waterproof and exceeds the height of the water that you will be wading through. Muck boots even come in handy in tall wet grass, which can totally soak any other water-resistant shoe.

Another option for dealing with wet grass is to wear a pair of gaiters. These Gore-Tex® (or similar material) leggings supplement any pair of shoes with additional waterproofing and protection against plants. With this addition, birders can not only improve their comfort in the field but also experience an extra measure of post-birding relief when they do not have to pick hundreds of seed heads and burrs out of their socks.

The Final Thread

Any discussion about footwear is incomplete without some discussion about the thin bit of fabric that goes between your foot and your shoe. Regardless of the quality or comfort of your chosen footwear, a poor choice in socks can easily leave you blistered, cold, and miserable.

As a rule, cotton is not a great option. Never wear cotton… ever. While cotton socks may be standard for many people due to their relative affordability and availability, investing in a few pairs of higher-quality socks is well worth the extra expense. Material is the key factor to consider, with synthetic materials and wool being the key players. I prefer a synthetic sock (generally a blend of polyester and spandex) for most short birding outings, due to their relative cheapness and convenience. But nothing beats wool on a cold or wet morning of birding. Wool is hands down the best material to keep your feet at a happy thermal medium, regardless of heat, cold, or dampness. Even the rough scratchiness that we generally associate with wool is not necessary anymore. Brands such as Smartwool® and Darn Tough Vermont® sell incredibly comfortable and durable Merino wool-blend socks that will keep you comfortable and blister-free through nearly all conditions.

Caretaking

Ensuring that your shoes hold together and take care of you for as long as possible may require a bit of extra effort. If you get your shoes wet, it is important to dry them as quickly as possible to prevent the formation of mildew, unpleasant odors, and actual damage to the shoe’s integrity. However, using a clothes dryer or hair dryer is generally inadvisable, as the extra heat can damage or shrink your shoes. Instead, remove the insert and stuff the inside of your shoe with dry newspaper and leave it to dry overnight. By morning, your shoes should be ready to go birding all over again!

Also, for the sake of foot health, it is important not to wear your shoes beyond their functional lifespan. For the typical distances most birders put in

Continued on page 32
ABA Event

Bird Cuba

When: March 13–23, 2018
ABA Host: Jennie Duberstein

When: April 4–14, 2018
ABA Host: Ted Floyd

When: September 8–18, 2018
ABA Host: Nate Swick

Cost: $4,490 11 days / 10 nights

Join us on a magical journey with a great opportunity to see all possible Cuban endemic birds. Along with a good number of Caribbean endemics, we'll look for Gundlach's Hawk, Bee Hummingbird (the world's smallest bird!), Cuban Trogon, Cuban Tody, Cuban Parakeet, Zapata Wren, and 18 other birds found nowhere else on Earth.

We will also get to experience the local Cuban culture, and have an opportunity to explore Havana and other interesting locations. Our friendly Cuban bird guides offer a rich local perspective on Cuban life, in addition to their extensive knowledge of the country's birds and wildlife.

This is a trip that you don't want to put off!

For more details and registration, go to:

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Footwear

across the year, this may never become a problem. However, for those of us who prefer long, frequent hikes in search of birds, it is necessary to check the condition of your shoes. In a pair of shoes that has otherwise served you well for many years, the compression of the soles due to excessive mileage can result in sore feet. Compression can be checked by depressing the center of the sole; if it gives easily, it may be time to search for a replacement. However, this can be largely a matter of the initial softness of the shoe, so judge with caution.

My final warning is to check your tread wear. Birding and walking on rough surfaces such as rocks or asphalt affects your tread the same way it does on car tires. Eventually you get balding and the potential for a “blowout”. While your shoes once kept you safely planted on the trail, a wet rock may now send you to the ground. A new pair of shoes is far cheaper than a new set of hips, so if you can no longer make out the tread pattern of your shoe, it is time for a replacement.

The Personal Touch

As I hope you have gathered, there is no one choice for you or for any particular outing. What you choose to wear ends up being a personal decision, dictated by your own comfort and fashion sense. I have been known to frequently bird in a very flat and unsupportive pair of high-top Vans skate shoes, for no other reason than that I consider them fashionable.

To find the specific model that is perfect for your feet, I recommend visiting specialty shoe stores. The employees at this type of establishment tend to be knowledgeable and capable of fitting you with the shoe of your dreams. Good luck, and good birding!
**2018 ABA Young Birder Camps**

**Camp Colorado I** • June 23–29, 2018  
**Camp Colorado II** • July 3–9, 2018

**YMCA of the Rockies • Estes Park, Colorado**
Camp Colorado is back again with two sessions for 2018! Join us as we explore Colorado’s birds from grassland to glaciers. From the shortgrass prairie of northeastern Colorado to the aspen groves and alpine tundra of Rocky Mountain National Park!

**Camp Fee:** $1395.00 includes all lodging, meals, transportation during camp events, instructional sessions and transportation to and from Denver International Airport.

**Camp Avocet** • July 28–August 3, 2018

**The Virden Center • Lewes, Delaware**
Now in its sixth year, Camp Avocet is only minutes away from two major National Wildlife Refuges and a short ride to the Delaware Bay. This is beach birding at its best! Are you looking for migrating shorebirds? Thousands of birds? Well, Camp Avocet is THE place to be!!

**Camp Fee:** $1395.00 includes all lodging, meals, transportation during camp events, instructional sessions and transportation to and from Philadelphia International Airport.

QUESTIONS? NEED MORE DETAILS? TO REGISTER:

Visit us: [events.abaa.org/aba-young-birder-camps](http://events.abaa.org/aba-young-birder-camps)

Contact us: Bill Stewart, Director of Conservation and Community  
bstewart@aba.org • 302.838.3654

- ABA Camps are open to all young birders aged 13 to 18.
- Inspiring field trips led by ABA staff members and special guest instructors, plus educational and challenging workshops.
- Scholarships Available: The ABA, through the generous support of our sponsors, provides limited scholarships to help young people who are interested in birds to attend our camps. Go to [youngbirders.abaa.org/scholarships](http://youngbirders.abaa.org/scholarships) for details.
Finding the Perfect Travel Bags
Some ladies buy purses. I buy adventure bags. In the past 30 years, I’ve purchased only two purses (now woefully outdated) but six canvas sport bags (most still in rotation despite their ink stains, ground-in dirt, floppiness, and lack of fashion-forwardness). As long as they have slots for my pen, notebook, binoculars, credit cards, plus, oh YES, a zippered pocket for my SD cards and passport, I’m unable to resist their utopian utility. I get a dopamine jolt just thinking about how well all that stuff fits!

Two months ago, I purchased a Swiss Army® brand sport bag (a handbag for adventure people) at Target. I didn’t really need it, but the Muzak was playing and I thought it was a fashionable step forward from my rag-tag collection at home; I use it daily, even though its unmistakable red logo clashes with my pride in certain circles. Meanwhile, a friend of mine recently confessed she has $1,000 worth of purses in her closet. They coordinate with her shoes and coats. Do I need an intervention? Or does she? Does the fact that my sport bag coordinates with my Keens let me off the hook!?

In the 10 years that I’ve been actively traveling, finding the perfect travel bag has been a costly and ongoing pursuit. As my travels became farther afield, my
camera became larger, my gear heavier and bulkier. I’ve tried several combinations of adventure bags and can’t say that I’ve landed on a perfect solution. But I will keep searching for the perfect bag or die trying.

Let’s understand the traveling birder’s dilemma.

We travel far from home and across continents under stressful or challenging conditions. We carry a lot of heavy “stuff”, such as binoculars, spotting scopes, cameras and lenses, laptops or tablets, and tripods, in addition to all the miscellany, including hats, rain gear, bug juice, field guides, headlamps, and charging appæramento.

We have to carry a variety of clothes and footwear to fit the wide-ranging conditions we’ll experience in the field. And we have to drag this heavy gear through long airport lines, in and out of buses and airport limos, and in and out of remote ecologies throughout our trip. And we need to save our backs and feet in the process.

For this reason, a low-stress birding trip demands advance planning and sturdy, functionally appropriate luggage. But which brands and models are best? David and Judy Smith from Durham, North Carolina, said, “We’re still working on this one, even after thirty years of birding travel!” The Smiths were just two of many birders surveyed from 16 countries who provided me with birding travel tips last year. Much of their advice appeared in the 2017 issue of Birder’s Guide to Travel, but their travel-bag advice is relayed here:

David and Judy Smith from Durham, North Carolina, said, “We’re still working on this one, even after thirty years of birding travel!” The Smiths were just two of many birders surveyed from 16 countries who provided me with birding travel tips last year. Much of their advice appeared in the 2017 issue of Birder’s Guide to Travel, but their travel-bag advice is relayed here:

I like lightweight hard-shell luggage with four wheels. It lasts 2–3 years, but it’s inexpensive enough to be disposable. I have a camera insert for a carry-on piece, and it’s much more lightweight than actual camera luggage.

—Linda from Corrales, NM

Eagle Creek is tops for adventure travel. It holds up well and has great features such as larger wheels which don’t get stuck and are more stable when pulling over uneven surfaces.

—Jude from Bayside, CA

I check a The North Face® duffel circa 1988—a Swiss Army®/Victorinox®, which lasted 12 years of weekly plane trips. Now the zippers are going and I can’t wait to read your article to see what I should buy next.

I switched to a large trunk that stands being tossed on/off planes and 4WDs. In addition, two backpacks: one for trekking day excursions, which holds camera, some food, water, and maybe

I have a giant Longchamp® Le Pliage bag for a “personal item” that can fit my scope, bins, camera gear, and change of clothes. That might be a bit too fashion-forward for most birders, though.

—Anon.

I now take two small, soft-sided L.L. Bean® bags on international trips. Many companies ask that you limit luggage to 40 pounds and often you have to handle your bags by yourself, so I pack 20 pounds in each bag because I find a 40-pound bag hard to handle.

—Winnie from Friendswood, TX

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Birders can often easily be spotted in airports by the way they dress. While this birder may be trying to fly under the radar, his rubber boots give him away! But what about his luggage? Photo © Michael Retter
ABA Event

Birding Rally: South Florida

When: April 26–30, 2018
Where: Homestead, Everglades National Park, and the Upper Keys
Cost: $1195

Keys & Dry Tortugas Extension

When: April 30–May 2, 2018
Where: Key West and Dry Tortugas
Cost: $900

Birding in South Florida in the spring is a bit like playing a slot machine rigged in your favor. You don’t know exactly how it’s going to work out, but odds are something good will happen. Between the Everglades, the surrounding agricultural areas, the Florida Bay ecosystem, the upper Keys, and various parks and neighborhoods in Miami, it is hard to not see great birds. Reliable birds include Wood Stork, White-crowned Pigeon, Roseate Spoonbill, Purple Gallinule, Swallow-tailed Kites and Black-bellied Whistling Duck. Other jackpot residents include American Flamingo, Snail Kite, Mangrove Cuckoo, Cable Sable Seaside Sparrow, Short-tailed Hawk, Shiny Cowbird and Smooth-billed Ani.

For more details and registration, go to:

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basic change of clothes. The larger one—a Lowepro® Pro Trekker—holds my spotting scope, binoculars, two more cameras, and a tele-lens.  
—Hasee from Stockholm, Sweden

My carry-on is a North Face® backpack and a Lowepro® camera bag. My favorite bag is a Briggs and Riley® rolling carry-on that I usually check. Rugged, looks good, wears well, lifetime warranty. Expandable depth if needed.  
—Anon. from Plain City, OH

I’ve tried myriad travel bags. Even the most rugged ones eventually tear in fabric or zippers break. The most expensive bags disappoint. The cheapest ones break immediately. I go for medium price and bring lengths of duct tape to repair on site.  
—Debbie from Philadelphia, PA

I use F-Stop® Gear for all my birding travel. The pack is small enough as a carry-on but large enough to fit two DSLRs, three lenses, a flash, and bins.  
—Jono from Melbourne, Australia

Eagle Creek® luggage and Think Tank for photo gear.  
—Anon.

A hard-sided Samsonite bag for most stuff plus a Lowepro® backpack used as carry-on for bins, computer, photo equipment, and the scope.  
—Fabio from São Paulo, Brazil

For many years, I used a 30” Columbia® duffel, but my life changed recently when I purchased my first wheeled luggage—a 28” Osprey® Shuttle. Holds enough for a two- to three-week trip, good configuration of compartments to keep small items organized, separate compartment for footgear, sturdy handles on three sides, etc. Being able to wheel the heaviest bag is heaven. Recent Africa trip was my first with newer, bigger camera and lens. I used a Lowepro® Fastpack 350 for the main camera, lens, and accessories. This bag also held my bins, field guides, checklists, medications, odds and ends needed during flight, etc. Smaller “personal

Continued from page 36
21st Annual Space Coast Birding & Wildlife Festival

January 24-29, 2018

Presented by SWAROVSKI OPTIK

Keynote Speakers:
Kevin Karlson & Pete Dunne
Kevin Loughlin
Michael Brothers

Spotlight Presentations:
Clay Taylor
Greg Miller
Sam Fried
Julie Zickefoose

Photographers:
David Akoubian
Mark Buckler
Vinny Colucci
Roman Kurywczak
Mike Milicia

- Classroom Presentations • Field Trips
- Outdoor Photography Shoots • Workshops
- Exhibit Center with Over 80 Exhibitors

Closing Ceremonies Include a Performance by the "The Rain Crows" featuring Bill Thompson & Julie Zickefoose from Bird Watchers Digest

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item” was a very useful Cotopaxi® bag, which held back-up camera and lenses, a fleece, and snacks. Clothing and footgear is all in the checked bag.

—Sandra from New York City

Osprey® Ozone wheeled bags for both checked and carry-on bags. I wanted bags that were lightweight with compression straps and stable wheels. Also, the carry-on bag had to have room for my tripod, spotting scope, binoculars, and a change of clothes. I pack everything using packing cubes; they make everything super-organized and very easy to deal with once at a destination. It makes moving from one lodge to another very simple. Packing and unpacking is a simple process with everything organized in their separate bags.

—LF from Spicewood, TX

One carry-on suitcase: eBags® TLS Mother Lode Mini 21” can be carried on international flights. I like Think Tank® rolling camera cases. They are durable, high-quality, functional, and inconspicuous as to their contents. I pack clothing in Eagle Creek’s® Pack-It Specter™ zip bags and all loose stuff is organized into bags.

—Susan from Cascade, CO

I like Filson® luggage for all checked luggage for non-camera items. Indestructible and not shiny and bright that says, steal me!

—Jim from Macon, GA

An Avalon® duffel on wheels and a second bag, usually Briggs and Riley®, sometimes eBags®.

—Michael from Trenton, NJ

Berghaus® 80-liter duffel; Berghaus® 25-liter rucksack.

—Mike from Cheshire, U.K.

As you can see, there are many options. While some people invest in mid-range luggage and budget for frequent replacements, others buy high-end pieces and hope they last. More important than which high-end piece you buy is whether it offers a lifetime guarantee. I dropped $375 on a large Eagle Creek® Tarmac, but the zipper broke within two years. Eagle Creek funded a replacement zipper—all I had to pay for was shipping.

A list of favorite luggage brands is found on this page. Start here in your quest and ask around for recommendations. Everyone travels differently, so it will take some trial and error—and lots more travel—to find which models work best for you. I know you will have fun trying!

For more resources on birding travel, visit NatureTravelNetwork.com (NTN). NTN features birding hotspot reviews, book reviews, and a destination directory which has an information portal to birding hotspots around the world. Click “Destinations” on the menu.

Have you found the perfect carry-on, daypack, or luggage solution? Share your thoughts with other ABA members at publications.aba.org/2017-BGGear
ABA Event

Tanzania Birds & Big Game Safari

When: March 31–April 10, 2018
Where: Arusha, Tarangire National Park, Ngorongoro Crater, and Serengeti National Park
Hosts: Jeff & Liz Gordon, Adam Riley, George Armistead and others
Cost: $4250 (single supplement $495)
Limit: 120 (small field groups of 12 people)

Tanzania is without doubt one of the most exciting trips a birder can make, with hundreds of species of birds, many of them large, tame, and colorful. Add to that the iconic mammals, scenery, and culture and you have an experience that will rank as among the most memorable of a lifetime. Our itinerary includes the Serengeti, famous for its extravagant megafauna, but also home to star birds like Gray-crested Helmetshrike, Red-throated Tit, and Steel-blue Whydah. Our tour is timed with hopes to see the magnificent migration of wildebeest, zebra and antelope. We will also visit Ngorongoro crater, Earth’s largest intact volcanic caldera, which also harbors dense populations of large mammals, as well as forest brimming with birds such as Hildebrandt’s Francolin, Schalow’s Turaco, and dazzling Tacazze Sunbirds, among others. For superb birding, masses of iconic animals, and photo ops galore, join the ABA and Rockjumper for an incredible adventure into the heart of Africa.

For more details and registration, go to: events.aba.org

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A few weeks ago, a friend of mine sent an ecstatic Facebook message asking if I could identify a bone he’d found washed up on the beach in California. He was nearly certain that he had just discovered a baby dragon skull. Have you ever seen anything like the bone pictured to the right? Kind of wild, isn’t it?

I love these kinds of challenges. Just about every week, a new one comes across my desk: “What kind of feather is this, Kristi?” “I came across a depression on the ground under a giant ponderosa pine tree with two speckled eggs in it. Who laid them?” “I found some tracks in the snow that look like someone drew a forward K and a backward K right next to one another. What the heck are they from?”

Most people come to me with out-of-the-ordinary birding questions because they know about my peculiar area of study in the birding world. From 1998 to 2003, I was a lead facilitator for the Wilderness Awareness School. This school is devoted to teaching people all over the world how to deeply connect with the natural world, as well as how to identify the tracks, scat, and sign of just about any living creature you could imagine.

Jon Young, author of What The Robin Knows, was the original founder of the school. Back in those days, I was often discouraged that I couldn’t find elders to help me learn more about the natural world. I was craving a depth of connection and understanding that the courses in college just never quite touched.

When I told Jon about my desire for elders, he said, “The elders are still here, Kristi. They’re just in a different form than what you might imagine.” I looked a little befuddled.
when he said this, so he went on, “Your field guides are your elders. Think about it: The authors of the field guides have spent years putting in their dirt time studying what you want to learn, so go to them when you have questions. If you can’t find your answer in the guides, then look to nature for the answer.”

Jon’s approach proved to be spot-on. So, today when I receive a question about tracks, scat, skulls, nests, or feathers, I typically direct the asker of the question to one of my favorite field guides so they can have the pleasure of discovering the answer for themselves.

These days, we are quick to satiate our curiosity with instant answers. What might unfold for us if we allowed ourselves to sit with a question, to get to know what we are looking at in an intimate manner before trying to figure it out? The journey to see more deeply might just lead us to discover something more rich and deeply satisfying than the instant gratification we initially thought we needed.

I would like to introduce you to a few of my favorite teachers/field guides so that the next time you come across a bird track, feather, skull, nest, or scat, you will have the elder you need by your side.

If it turns out you are unable to find your answer amongst any of these resources or in the natural world itself, feel free

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### ABA Event

**Birds of Alaska**

*Breeding Extravaganza and Asiatic Vagrants*

**When:** May 19–30, 2018

**Where:** St. Paul Island (Pribilofs), Gambell on St. Lawrence Island, Nome on the Seward Peninsula

**Hosts:** High Lonesome BirdTours

**Cost:** $7550

**ABA Event**

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- **The Pribilof Islands:** Often called the “Galapagos of the North.” St. Paul Island hosts some of the largest colonies of alcids in the world, as well as the largest Northern Fur Seal colony in the world. Expect to see Asian vagrants along with the resident species. Huge colonies of seabirds, including Parakeet, Least and Crested auklets; Horned and Tufted puffins; Thick-billed and Common murres; Northern Fulmar; and Black-legged and Red-legged kittiwakes.

- **St. Lawrence Island:** High Arctic and Asian vagrants are the draw at Gambell. Northwest Point usually yields Arctic Loon, Yellow-billed Loon, Dovekie, Emperor Goose, and Ivory Gull as well as many other seabirds and ducks. The centuries-old bone yards often hide vagrant passerines, e.g., Eurasian Bullfinch, Hawfinch, and Common Cuckoo.

- **Nome:** Accessible only by boat and airplane, Nome is a fascinating and challenging destination. We’ll cover the prime birding areas along the seacoast, the high tundra and, if time permits, the only boreal forest on the Seward Peninsula. Rarities include the Rock & Willow ptarmigans; Bristle-thighed Curlew; Bar-tailed Godwit; Red-necked Stint; Aleutian Tern; Gyrfalcon; Bluethroat; Eastern Yellow Wagtail; White Wagtail; and others.

For more details and registration, go to:

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to shoot me a message with as much descriptive text as possible. I would be happy to help guide you toward the answer you are seeking.

Each of the following books can be found at the Birdmentor.com bookstore by clicking on the ABA logo. If you purchase your books here, you will be supporting both a small-town bookstore and a small, independent business.

**Bird Tracks**

- Mark Elbroch’s *Bird Tracks & Sign: A Guide to North American Species* is a great place to begin. Mark has extensive knowledge on the topic of animal tracks and sign, and he has written 12 books on these subjects. For those of you wanting to really geek out, this book is one of the most thorough resources about bird tracks and sign that I have seen.

- David Moskowitz’s *Wildlife of the Pacific Northwest: Tracking and Identifying Mammals, Birds, Reptiles, Amphibians, and Invertebrates* details critters found in the Pacific Northwest. At first, this would appear to serve only those in this specific part of the country, but I’ve found that many of the species he writes about actually live throughout the western U.S. I look to Dave’s book as one of my main cross-reference guides. Even though the species he covers are also found in Mark Elbroch’s book, Dave has a slightly different skill set that I enjoy learning from. All of the drawings in the book are his and are arranged in an intuitive format that is easy to look at and learn from. Plus, you get to learn about the tracks and sign of mammals, reptiles, amphibians, and invertebrates right alongside the birds.

- **ONLINE RESOURCE:** The Facebook group “Animals Don’t Cover Their...”

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Tracks" is a lovely group to join if you have a passion for understanding more about animal tracks and sign. The group welcomes folks of all levels and covers all forms of living creatures. I jump on the group from time to time to comment on questions about bird sign.

**Bird Feathers**

- *Bird Feathers: A Guide to North American Species* by S. David Scott and Casey McFarland. McFarland provides examples gathered from various museums of 379 bird species across North America. This is a tough topic to cover in any depth because it is so vast, but David and Casey did a wonderful job pulling together images of feathers from every part of the bird you might find. I love to look through this book in my spare time because it helps me notice unique feather patterns that exist amidst the various bird families.

- **ONLINE RESOURCE:** The Feather Atlas, [www.fws.gov/lab/featheralas/idtool.php](http://www.fws.gov/lab/featheralas/idtool.php) is a great free online resource very similar to the *Bird Feathers* book but with fewer species depicted.

**Bird Nests and Eggs**

- You heard it here first: The new *Peterson's Field Guide to North American Bird Nest* will be available in 2019, so keep your eyes peeled for it. The authors are aiming to make this book highly usable in the field, formatted to provide people with what they need to identify the nests they discover. Plus, it will be filled with current research to help people understand the basics of bird nesting/breeding behavior.

- *The Book of Eggs: A Life-Size Guide to the Eggs of Six Hundred of the World's Bird Species* by Mark E. Hauber is beautifully designed with life-size images of bird eggs from all over the world. This feature of the book makes it both wonderful to work with as well as a little cumbersome due to the breadth of species it covers, just like a bird guide that covers an entire country compared with one that focuses on a specific region. There are many books out there that speak to bird egg identification, though this by far is my favorite.

**Bird Bones**

The following two websites provide a wealth of images and information about bird bones. It is important to remember to take measurements when you come across a skull or bone, because certain bones from one species can look nearly identical to the bones of another species.

- **The skull site:** [skullsite.com](http://skullsite.com)

The next book I mention is not necessarily the first one you would turn to when you are trying to identify a bird bone, but you might. Katrina Van Grouw's book, *The Unfeathered Bird* is a magical look at the insides of a bird. Each of her illustrations was taken from real specimens that either died accidentally or were already preserved in a collection. Reminiscent to Roger Tory Peterson's approach to drawing birds in their natural habitat and posture, Katrina depicts her birds in postures they might have portrayed had they been alive.

Even though most birders find feathers, bones, tracks, and sign fairly frequently, I've discovered that they often aren't aware that these exist. If you are ready to take your birding to the next level or simply have a yearning to know the world around you in a deeper way, then dive into the wilder side of birding with one of the books I mentioned. If it turns out that you really geek out on tracks and sign, don't worry: There is help for people like you. The Wilderness Awareness School, Alerleaf College, and White Pine Programs offer a variety of options for long-term mentoring and courses in track and sign identification.
Southeastern Arizona is home to many resident species of breeding sparrows and a favored location for migrants to overwinter. We will visit semi-desert grasslands and riparian woodlands to observe the behavior and habitat selection of over 20 species of sparrows, towhees, and longspurs. Daily outings will be followed by classroom presentations on identification, vocalizations, ecology, natural history, and conservation. Potential highlights include Cassin’s, Rufous-winged, Black-chinned, and Baird’s Sparrows and Chestnut-collared and McCown’s Longspurs. Other birds of interest that may be seen include Ferruginous Hawk, Scaled Quail, Bendire’s Thrasher, and Mountain Plover.

For more details and registration, go to: events.aba.org

ABA Event

IFO: Winter Sparrows of the Southwest
When: January 25-30, 2018
Where: Sierra Vista, Arizona
Instructor: Homer Hansen
Cost: $1550
Limit: 6 people

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November 2017 | Bider’s Guide to Gear

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Dear ABA Friends,

In the past year, the American Birding Association has run exciting, challenging, life-changing programs for hundreds of younger birders, the people who will lead our community into its future. In 2018, do you want to see us do more of this work, or less?

Throughout 2017, we have reached out far beyond our membership to provide help, guidance, and education to the wider birding community, through our Code of Ethics, through free web services like our Rare Bird Alert, Birding News, and “What’s this Bird?,” as well as our newly-launched and widely-lauded American Birding Podcast. Do you want to see us provide more of these services in the coming year, or less?

This year, we’ve acted as advocates for the interests of birders, leading other organizations many times our size in the effort to save Santa Ana National Wildlife Refuge and hundreds of other prime birding spots from being damaged and potentially closed off by ill-advised new border wall construction. In the coming year, do you want to see us do more of that kind of speaking out for birders, or less?

If you’ve answered “more” to any or all of the above, please act right now to help make that happen. A tax-deductible gift of any size will help. The point is to do what you can, now, and not let the opportunity pass by.

As the ABA’s 48th year draws to a close, I’d like to thank you for all that you’ve done, through membership, through donations, and through giving your time and energy, to inspire all people to enjoy and protect wild birds. And I’d like to challenge you to do even a little more in the New Year.

I wish you a joyful holiday season and a new year filled with great birding.

Yours,
Jeffrey A. Gordon, President

PS: 2018 will be here before you know it. Today is your chance to make a difference in the ABA’s future! A gift of $50 will really help, but any amount is greatly appreciated!
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