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On the cover:
Adequate preparation combined with the right gear can make the difference between enjoying yourself and being completely frustrated, especially when further afield. Birder’s Guide aims to provide advice you can depend on for a stress-free and joyous birding experience. Photo © Vidit Luthra
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At the American Birding Association, we strive to provide the birding community with practical, useful information that makes birding even more pleasurable, satisfying, and where possible, easier. Birder’s Guide to Gear is part of that effort.

Having the right gear and knowing how to use it well can make the difference between a frustrating day afield and a triumph. To that end, we are always looking for ways to help you not only make good purchases of new equipment, but also to get the most out of the gear that you already own. I hope that you’ll find much of use here.

I also hope that you’ll share this issue, and others in the Birder’s Guide series, with other birders, whether they are ABA members yet or not. Simply point them to aba.org/birdersguide where they can view and download full electronic versions. And remind them that the best way to keep information like this coming is for them to join the ABA, too.

Finally, please let us know what kinds of information and topics you’d like to see covered in future editions of this and other Birder’s Guides. We learn when we help you learn.

Good birding,

Jeffrey A. Gordon
President, American Birding Association

When you’re scanning a mudflat through heat waves or peering out to sea from some wave-battered headland, there is perhaps no bit of birding gear that’s simultaneously more of an afterthought and more vital than the tripod. I don’t know about you, but I don’t make much of an effort to keep on top of recent trends and advances in fieldscope support systems. So it’s articles like Bill Schmoker’s in this issue of Birder’s Guide to Gear that I depend on.

You’ll also find advice on the latest birding apps, what gear you need for a comfortable trip to the Neotropics, and what camera gear to take with you on your next trip. For the note-keepers among us, there’s even a review of waterproof notebooks. It’s my hope that there’s something of interest for everyone within these pages.

Please let us know what you’d like to see reviewed or discussed in the next issue. Even better, consider writing an article for us. Birder’s Guide only exists because our talented pool of ABA members is willing to share its knowledge. By the same token, we at the ABA depend on our members to give us feedback about what they want—and don’t want—to see in ABA publications. Please consider taking just a moment to share your thoughts with us, either via the email address printed above or at aba.org/birdersguide.

Good birding,

Michael L. P. Retter
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Kathi Borgmann has spent the last 20 years birding and studying birds throughout the Americas. She received her master’s degree from Ohio State University, where she studied the effects of non-native plants on nesting success of songbirds. She received her Ph.D. from the University of Arizona in 2010, where she studied factors that affect the risk of nest predation throughout the breeding season. Recently, Kathi and her partner, Josh Beck, embarked on an ambitious journey traveling and birding throughout the Americas. They spent 14 months birding nearly every day from Baja to Panama. Kathi and Josh are currently continuing their expedition in South America. You can read about their adventures at birdsofpassage.wordpress.com.

Diana Doyle travels 12 months a year aboard a catamaran aptly named “Semi-Local” and is the department editor for Birding’s Tools of the Trade column. She’s working on her “personally found” list, trying to locate birds without land or sea tour groups, guides, or listserv stakeouts. One of her most recent birding highlights was finding a Red-billed Tropicbird in the Gulf of Mexico off Key West.

Elise Faike is a geologist and adventure travel planner who lives in Chalilis, Idaho with her husband Dave and their new dog, a little blue heeler named Tater. She enjoys birding and watching wildlife all over Idaho, the U.S., and the world. Elise has finally seen a wolf in Idaho but would still like one to pose for her there for a photograph.

Bill Schmoker wrote the “Geared for Birding” column in Winging It and is a frequent photo contributor to Birding and other ABA publications, in addition to a wide variety of books, magazines, and other media. He is an author on the ABA Blog and proud of his involvement with the ABA Young Birders; he is a Camp Colorado and Camp Avocet instructor and photo module judge for the Young Birder of the Year contest. A past president of Colorado Field Ornithologists, Bill is currently on that state’s bird records committee. He is pleased to be a member of the Leica Birding Team and is cranking along in his 24th year of teaching eighth grade.

Tom Stephenson has been birding since he was a kid. His articles and photographs are in museums and many publications, including Birding, Bird Watcher’s Digest, Handbook of the Birds of the World, Handbook of the Mammals of the World, and A Birdwatching Guide to South-east Brazil. He was on Zeiss’s digiscoping team for the World Series of Birding; his team, co-led by Scott Whittle, won the Cape Island Cup in 2011 and set the U.S. record for a photo big day in 2014.

Scott Whittle has 20 years of experience as a professional photographer and educator in New York City and Cape May, New Jersey. His B.A. in literature from Northwestern and M.F.A. in photography from the School of Visual Arts reflect his passions for writing and photography. Scott’s love of travel has taken him to over 30 countries and 46 states. He is a one-time Big Year record holder in New York State, his team holds the current U.S. Photo Big Day record, and he co-authored The Warbler Guide with Tom Stephenson.
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A lot of attention gets paid to the importance of having a good (what the heck, how about great) spotting scope in one’s optics quiver. But let’s not forget that the tripod/head combo foundation is every bit as paramount to optimal scoping. Like the gear they are designed to support, tripod and tripod head offerings have come a long way since many of us began birding. Here, I’d like to summarize some considerations for tripod and tripod head selection, whether you are ready for your first investment or mulling an upgrade to your existing kit. When dealing with a multi-part system such as tripod, head, and scope (and perhaps digiscoping adapter + camera), overall performance can be limited by the weakest link in the system. In this regard, your choice of support can be nearly as important as your choice of scope.

As with about any major gear purchase, a significant starting point is to think about how you plan to use the equipment. For example, a birder with a small scope for traveling will look for a tripod system differently than someone planning to use a large scope for digiscoping. ABA Sales partner Eagle Optics <eagleoptics.com> provides a great resource for birders, firstly by selecting tripods and heads best suited for birding out of the vast photography market, and secondly by providing detailed descriptions and specifications for any product they carry, allowing for easy online research. If anything I discuss leaves you with questions or if you just want to cut to the chase, give them a call or try their online chat. With a staff of experienced birders on hand, they will work with you on a personal level to find a perfect fit for your needs.

So what are the major considerations when choosing a tripod system? I think a fundamental area to begin with is the tripod material. The choices for tripods fall into two types:
aluminum and carbon fiber. Aluminum tripods are reasonably light, durable, and more affordable than their equivalents in carbon fiber. Carbon legs will cost more but are lighter than an equivalent aluminum model. Aluminum can dent and bend a bit, while carbon will keep its shape until its breaking point is reached. In cold weather, carbon tripods can be a lot more comfortable to handle than heat-wicking aluminum. To me, the most significant difference between the two materials is the vibration-dampening abilities of carbon fiber. This is readily apparent when birding in the wind or if you are digiscoping and require the most steady platform.

To summarize, aluminum tripods work well for general birding and for saving some money. But if you want to save some weight instead of bucks and get the best out of your tripod, then carbon is the way to go.

Another tripod feature to consider up front is the number of leg sections. In most cases, the choice will be between 3- and 4-section tripods. 3-section tripods are typically a bit more affordable than their 4-section counterparts and may save a little weight since a 4-section tripod has an extra set of leg locks and extra construction costs. 3-section tripods are a bit more convenient to set up and take down, but 4-section models collapse down smaller and can be more easily stowed in carry-on luggage or backpacks. Often, 4-section tripods are termed travel tripods for this reason. When I fly, I put my 3-section tripod in my checked luggage (with scope in my carry-on camera bag), but there are times when I realize that a 4-section would be nice to have in my carry-on when traveling via commercial airlines so as to avoid checked-baggage hassles.

Once you’ve narrowed down the fundamentals of construction material and leg sections, you can begin to evaluate tripods within your desired configuration. How much a tripod weighs is certainly important. A good way to evaluate that is to see what the load rating of each tripod is, which will make tripod weight comparisons more meaningful. For example, a tripod rated for a 10-lb. load may come in lighter than one rated for 26 lbs., but it will not be as sturdy. It is also worth noting the maximum extended height of a tripod, as shorter tripods will save weight but may not meet the needs of, say, a tall birder using a straight-through scope. Leg sections typically have flip locks, but some have collar-twist locks. For me, the quality of construction (generally equated with price) is the biggest predictor of whether or not I’ll like section locks, not which type they are. Selecting a set of legs separately from a tripod head gives you the most flexibility in creating a custom rig, but it might seem daunting (more on heads to follow). Tripods can also be purchased as a kit that includes both legs and head, simplifying the process.

To summarize, aluminum tripods work well for general birding and for saving some money. But if you want to save some weight instead of bucks and get the best out of your tripod, then carbon is the way to go.
even the flimsiest tripod/head systems seem adequate on paper since even full-sized scopes these days won't top their load rating. Many heads ideally suited for spotting scope use have 2-way tilt/pan controls, but some have one control for both axes of motion. Like tripod leg-lock options, this choice of head type boils down to personal preference and quality of construction.

Heads have a difficult dichotomy of performance criteria. With minimal effort, you should be able to lock off scope movement, but when scanning, they should move smoothly without being too loose. In my opinion, the best tripod heads have the additional ability to allow fluid scope movement when you are searching and to then leave the scope on target when you let go without the additional step of locking off the head.

With the help of Ben Lizdas, sales manager at Eagle Optics, I was able to test 10 of their most popular tripod offerings (some as legs only and some that come as kits). Ben also sent six heads to test, covering a range of types and price points. Additionally I reviewed a newly released Leica tripod and head combination that Jeff Bouton of Leica Sport Optics sent me to include in the article. (Full disclosure: I am a member of the Leica Birding Team and use their gear on a consignment basis.) Below, I summarize my findings of each. (Prices are from the Eagle Optics web page as of 2 November 2015 unless otherwise noted.) Please also allow that tripod kits will be a bit heavier and bulkier than a leg-only equivalent. Ultimately, you might want to add the weight and price of the legs and head along with a few inches of extra clearance that the head will add to the folded length and extended height when you are comparing rigs.

**TRIPOD LEGS**

- **Manfrotto 190X3**: $179.99, Aluminum, 3-section lever locks. 63” max. extended height, 23.2” folded length. Weight 4.4 lbs., maximum load 15.4 lbs. **Reviewer comments**: This is the updated version of Manfrotto’s (and prior to that, Bogen’s) workhorse birding tripod. It’s really hard to go wrong with the combination of price and sturdiness. This model (and the other Manfrottos to follow) features “Easy Link”, which is a threaded attachment point for accessories. For typical birding use, this may not be of great utility, but it could be cool if you’ll also be using your tripod for some types of photography. The center column on this and the other Manfrottos is cylindrical but with a flat side to prevent it rotating when adjusting it up or down. Manfrottos with lever locks come with a clip-on wrench for adjusting tension, particularly helpful if a joint is getting loose...
Propping It All Up

on you in the field. Rubber padding on two legs isn’t particularly soft but will help keep you from freezing your fingers to the aluminum in cold conditions.

- **Manfrotto MT190XPRO4**: $239.99, Aluminum, 4-section lever locks. 63” max. extended height, 20.6” folded length. Weight 4.6 lbs., maximum load 15.4 lbs. **Reviewer comments**: Essentially a travel version of the MT190X3, it adds newer, more ergonomic leg locks and a 90° column feature which seems really cool for things like macro photography. Probably wouldn’t be of much use for scoping, however. The PRO series also adds a leveling bubble on the top of the legs, which can be pretty helpful if you are setting up for a long session of scoping the horizon, such as on a seawatch or looking over mud flats for shorebirds. When your tripod is level, you can track perfectly side to side with just the panning axis and thus keep the tilt snug until needed.

- **Manfrotto MT190CXPRO4**: $429.99, Carbon fiber, 4-section lever locks. 63” max. extended height, 19.2” folded length. Weight 3.6 lbs., maximum load 15.4 lbs. **Reviewer comments**: This was the most compact (and shortest) tripod I tested, but when fully extended, I still found it usable without center column extension with my angled scope (I’m 5’10” tall.) This model departs from the other Manfrottos with collar twist locks that felt very good to me, solidly locking with minimal effort in a way similar to Gitzo’s (more on those next). It lacks a leveling bubble but sports a single foam leg pad, Easy Link connector, and 90° column features. Really great travel tripod for the money, and if Manfrotto ever comes out with a carbon version, it could be brilliant!

- **Gitzo 2542 Mountaineer**: $799.99, Carbon fiber, 4-section collar twist locks. 65.7” max. extended height, 22” folded length. Weight 3.7 lbs., maximum load 39.7 lbs. **Reviewer comments**: Essentially the MT190XPRO4 in carbon & without rubber leg pads. Adds $90, but shaves off a pound. Have you heard how thru-hikers do stuff like cut off their toothbrush handles to save a few grams in their packs? Imagine what they would do for a whole pound off their backs. Well worth the extra cheddar for the weight and vibration adjustment benefits, in my opinion.

- **Manfrotto 190GO**: $199.99, Aluminum, 4-section collar twist locks. 48” max. extended height, 17.7” folded length. Weight 3.7 lbs., maximum load 15.4 lbs. **Reviewer comments**: This was the most compact (and shortest) tripod I tested, but when fully extended, I still found it usable without true, but with Gitzo I think it holds true. Superior durability, phenomenal weight-to-maximum-load ratio, and elegant functioning are all hallmarks of this tripod line. A grooved center column prevents spinning during adjustment, and, unlike the prior tripods, the column is adjusted with a twisting collar instead of a tightening knob. I’ve used an older, 3-section Gitzo Mountaineer heavily for almost 15 years now, and it just won’t die. I almost wish it would so I can upgrade to this sweet 4-section version with the newest G-lock ultra system leg collars.

- **Gitzo 1542 Mountaineer**: $699.99, Carbon fiber, 4-section collar twist locks. 62.6” max. extended height, 21.3” folded length. Weight 2.8 lbs., maximum load 22 lbs. **Reviewer comments**: Well, if you’re still reading about this one after seeing the price, you’ll realize that Gitzos are the cream of the crop. I know the maxim “you get what you pay for” doesn’t always hold
setup, cross-use with a long DSLR lens, or work in a particularly rugged situation, such as a public hawkwatch or seawatch where it will see heavy use in gusty conditions.

- **Swarovski CT 101**: $529 for legs only, $879 for kit including DH-101 head, Carbon fiber, 3-section lever locks. 66.9” max. extended height, 22.8” folded length. Weight 3.3 lbs., maximum load 10.9 lbs. **Reviewer comments**: Solid-feeling tripod, well-built. Padding on all 3 legs is nice, as is the hook on center column (allowing for a weight to be hung or that the tripod be tied down in windy conditions.) Comes with carrying strap and Allen key to adjust tension on leg locks. The round center column can spin when the locking knob is loose.

- **Swarovski CT Travel**: $509 for legs only, $839 for kit including DH-101 head, Carbon fiber, 4-section lever locks. 66.9” max. extended height, 19.7” folded length. Weight 3.1 lbs., maximum load 10.9 lbs. **Reviewer comments**: Essentially a travel version of the CT 101. Shaves 3 inches and a few ounces off the CT 101 specs.

- **Vanguard ABEO 283 AV (kit with integral head)**: $219.99, Aluminum, 3-section lever locks. 66.5” max. extended height, 28.5” folded length. Weight 5.5 lbs., maximum load 8.8 lbs. **Reviewer comments**: An affordable, all-in-one solution that seems best for medium to small scopes. Nice features like foam padding on legs and a leveling button add to its utility. Leg levers don’t have field-adjustable tension, and savings come with a bit of extra weight and larger folded size along with moderate load limit.

- **Vortex Pro GT (kit with integral head)**: $149.99, Aluminum, 3-section lever locks. 67.1” max. extended height, 24.6” folded length. Weight 4.4 lbs., maximum load 10 lbs. **Reviewer comments**: Darned amazing weight-to-load ratio for the cost. Lacks adjustable lever locks and the center column can spin when it is being adjusted, but seems fair for the price. A simple tripod ready to go out of the box, probably best for light use.

- **Leica C-170**: $529.00, Carbon fiber, 3-section lever locks. 64.2” max. extended height, 24.8” folded length. Weight 3.1 lbs., maximum load 26.5 lbs. **Reviewer comments**: Outstanding weight-to-load limit ratio, and a very well put together piece of gear. Foam pads on two legs & included lever lock adjustment tool nice plusses, along with grooved center column with twist-collar lock and hook. A bubble level and compass add nice finishing touches.

### TRIPOD HEADS

In addition to the specs and general comments, I devised two simple and admittedly subjective tests for comparisons. The first (“leave where pointed”) is to adjust the settings so the scope has fluid movement when scanning but enough tension to stay on target when let go without locking off the head. The second (“bump test”) is to lock off the head and then push and bump the handle to see how much movement was produced in the head as an indicator of sturdiness.

- **Manfrotto 128 RC**: $104.99, Weight 2.2 lbs., 8.9 lb. maximum load. **Reviewer comments**: This ubiquitous head serves as a good standard by which to compare
Propping It All Up

others. Affordable and sturdy but has a bit of play as the tilt tension/lock is loosened. Scopes with standard Bogen/Manfrotto release plate-compatible feet will snap right into this head. Poor on the “leave where pointed” test as the head works best either loose for scanning or locked for staying put. Good on the bump test.

• **Manfrotto 322 RC2 Grip Action Ball Head:** $179.99, Weight 1.42 lbs., 11 lb. maximum load (5.5 lbs. in vertical position.) **Reviewer comments:** I’ve never been a big fan of pistol-grip heads but was pleasantly surprised by this model. These type of heads work best for scanning at low power, as they are pretty wiggly and introduce a third, twisting axis of motion. A tensioning wheel helps to moderate the squirrely nature of others I’ve tried. When you find something and let go of the grip, it locks down immediately. A leveling bubble on the moving portion of this head doesn’t make much sense to me, as having it on the base or better yet on the legs seems much more useful. Scopes with standard Bogen/Manfrotto release plate-compatible feet will snap right into this head. Excellent on the “leave where pointed” test and fair on the bump test.

• **Manfrotto 700 RC2:** $84.99, Weight 1.1 lbs., 5.5 lb. maximum load. **Reviewer comments:** Classic fluid head with tilt/pan tension/lock controls. It takes a standard Bogen/Manfrotto quick-release plate, but on this head the plate mounts sideways, so scopes that have this footprint built in will still need the addition of the included release plate. Poor on the “leave where pointed” test (the tilt seemed essentially on or off) and good on the bump test. At half the weight of the 128 RC, this is a good choice for a light, affordable head.

• **Manfrotto MHXPRO-2W Fluid:** $149.99, Weight 1.6 lbs., 8.9 lb. maximum load.

**Reviewer comments:** Another fluid head with tilt/pan tension/lock controls. Heavier and sturdier than the 700 RC2, this will offer a more stable platform for larger scopes and digiscoping as a result. Scopes with standard Bogen/Manfrotto release plate-compatible feet will snap right into this head. There is a tab you can press that helps to counterbalance heavier scopes, but the feature seems made for camera lenses of less heft and won’t totally compensate like the balancing system in the Gitzo G2180 (more on this one below). A leveling bubble on the base will come in handy if your legs lack one. Good on the “leave where pointed” test and fairly good on the bump test. The head was sturdy in the vertical axis but had more play when bumped horizontally.

• **Manfrotto MHXPRO-BH3 Fluid Center-Column Head:** $249.99, Weight 1.2 lbs., 10.9 lb. maximum load. **Reviewer comments:** Ready to go out of the box, with large tension/locking knob for tilt and pan control from one knob: a light touch locks or releases the movement in both axes. Coupled with the ability to balance your scope with a forward/backward sliding quick-release mount, this head excels at smoothly scanning when you want it to and staying on target when desired. A bit heavy but also very sturdy. Excellent on the “leave where pointed” test and excellent on the bump test, this is the head I’ve been primarily using for over a year now.

• **Swarovski DH-101 (comes with Swarovski CT 101 kit):** $419.00 head only, Weight 1.2 lbs., 10.9 lb. maximum load. **Reviewer comments:** Tilt/pan-style head with large tension/locking knob for tilt and a smaller lever for locking/releasing the panning axis. Tension on the panning axis adjusted by a separate screw. Very snappy, secure quick-release mechanism with proprietary release plate. Curious placement of leveling bubble on the tilting part of the head instead of the base. Moderately good on the “leave where pointed” test and fair on the bump test.

• **Vanguard ABEO 283 AV (kit with integral head):** $219.99 (legs & head), Weight N/A, 8.8 lb. maximum load. **Reviewer comments:** Another fluid head with large tension/locking knob for tilt and pan control from one knob: a light touch locks or releases the movement in both axes. Coupled with the ability to balance your scope with a forward/backward sliding quick-release mount, this head excels at smoothly scanning when you want it to and staying on target when desired. A bit heavy but also very sturdy. Excellent on the “leave where pointed” test and excellent on the bump test, this is the head I’ve been primarily using for over a year now.

• **Gitzo GH2720QR Fluid Center-Column Head:** $364.99, Weight 1.54 lbs., 13.3 lb. maximum load. **Reviewer comments:** A head refreshingly designed for bird watching instead of one made for videography or photography. Super tilt and
proprietary quick-release plate. The panning function feels pretty fluid, but the tilt is pretty much on or off without much in-between. Fair on the “leave where pointed” test and good on the bump test.

• **Vortex Pro GT** (kit with integral head): $149.99 (legs & head). Weight N/A, 10 lb. maximum load. **Reviewer comments:** Another system ready to go out of the box. Unique among the heads tested here: both tilt and pan tension/lock are controlled by twisting the handle. It also has a proprietary quick-release plate. Poor on the “leave where pointed” test (this head works best as “on” or “off” for movement) and fair on the bump test.

• **Leica VH1 Video:** $249.00. Weight 0.8 lbs., 5.5 lb. maximum load (price and specs from B&H Photo, 2 November 2015.) **Reviewer comments:** Surprisingly sturdy for its weight. Tilt controlled by typical tension/lock knob, while panning has a lock lever and separate tension adjustment screw. Leveling bubble on base of head nice, but seems redundant if using on legs with their own leveling bubble. This and the Gitzo GH2720QR were the only heads I tested with a sliding quick-release mount for balancing the scope, an especially useful feature for digiscoping. Good on the “leave where pointed” test and excellent on the bump test.

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I discovered Rite in the Rain (RITR) notebooks and pens while working as a field geologist and later wrote about them for Birding’s “Tools of the Trade” in 2003. Much has changed since then, because they keep evolving, yet much remains the same. I still love them, and, if need be, I can still tear out a page from my notebook to make a drinking cup for my dog!

Today there is an array of product choices that are very useful to birders, but their durable, archival, high quality and utility remains the same. So, it's fitting to revisit Rite in the Rain.

RITR paper has been around since 1916. All RITR products are, and have always been, made in Tacoma, Washington. The paper is produced with a low impact on the environment, the inks are soy-based, and most of the covers contain post-consumer recycled materials. The modern manufacturing facility and equipment are designed to be energy-efficient. Packaging is eco-friendly, and any RITR notebook is entirely recyclable.

Here’s a look at a selection of Rite in the Rain products currently available:

**NOTEBOOKS**

RITR notebooks are birder-proof. They will withstand almost any abuse you can think of. Their classic appearance is a bright yellow cover with white pages. One of the best innovations, though, is the addition of more colors. There are now stealthier greens, desert tans, and the new Midnight Collection with black covers and gray pages. These are all less reflective than blazing white pages that could potentially frighten away birds while you’re recording them in the field. The tinted pages are also easier on the eyes in bright sun.

RITR Notebooks are very versatile. They come in many sizes and formats. Stapled, Minis, Top-Spiral, and Memo Notebooks are all great for birding, as is the dedicated Side-Spiral Birder’s Journal with page patterns designed for sketching and field notes: blank sketch pages face lined pages formatted for date, time, weather, and location. It is 4 5/8” x 7”. Reference information inside the covers features bird parts, feathers, and the ABA’s Code of Birding Ethics.

All of these notebooks have Field-Flex or Polydura covers, which are even more durable than the older, treated tagboard covers were. Some of the covers have measurement conversion charts, and most have handy little rulers on
them, in case you need to measure a jaguar track while birding in Brazil. The spiral-bound notebooks let you leave them open to keep your place. Various page patterns exist, and any notebook is available in several sizes and any of the colors.

The 4 5/8” x 7” yellow Stapled Notebook ($12.95/3-pack) was my standard field geology notebook. I still use them for vehi cle maintenance log books. This 48-page book was recently updated with a tougher Field-Flex cover. Minis are miniature versions of these standards that fit easily into any pocket ($6.95/3-pack). With 24 pages, the Mini is perfect for a day or weekend trip. It’s one of my favorites. After awhile, I had so many that I started decorating them to tell them apart!

Top Spiral notebooks ($3.95–$14.95) range in size from Pocket (3” x 4.5”) to Maxi (8.5” x 11”). With Pocket notebooks, I have to pay attention to which way is up, or my notes will be upside down from page to page!

Small, bound Memo notebooks (3.5” x 5”, $4.95) are another of my favorites. The first ones to come out were green and tan; they are now available in Midnight, too. I like to keep my pen clipped in myMemo book for quicker note-taking. These have 112 pages and are nice for longer trips and keeping a running birding diary over the year or longer.

The Birder’s Journal ($7.95) comes a la carte or in a kit ($39.76) that includes a CORDURA® fabric cover, the journal, an All-Weather Pen, and room for other small items. The other notebooks come separately or three to a package and are also available in kits. In case they mistakenly get thrown into the wash, they’re all still laundry-proof.

Other notebooks of interest to birders are the case-bound, Fabrikoid-covered Travel Journal, Sketch Book, and 770F Maxi Bound Book. The Travel Journal (US$18.95) is 4.25” x 6.75” with top-spiral yellow covered notebook with white pencil-friendly pages, is for serious outdoor artists. The 770F Maxi (US$29.95), also 8.5” x 11”, has perforated pages. Not only is its Midnight cover stealthy, the gray pages are easy on the eyes. Its Universal page pattern makes for a good journal or project record book.

Countless other RITR notebooks, loose leaf binders, and papers are available, including different specialty ones. For example, there are Re treiver’s Training, Fishing, EMS, and Livestock Record books with formatted pages. DuraRite is a synthetic paper created for use in extreme conditions. It is actually waterproof and can even be used under water. However, if you can’t find something to suit you, RITR will be happy to customize a unique notebook or formatted paper for you, though minimum quantities apply.

**Writing Instruments**

Any pencil will write on wet or dry RITR paper. Most pens will write when the paper is dry, and once something is written, it will not rub off. Not all pens will write on wet paper, but RITR All-Weather Pens write through anything! They write smoothly through water, over dirt, through grease, on napkins, upside down, and in extreme temperatures. Their ink will never leak, evaporate, or explode.

My first RITR pen was a Number 37 black and silver clicker with black ink. These 5 1/8” pens are still available, in addition to silver/blue and silver/red ones with corresponding ink colors and the RITR logo on them (US$10.95). However, the newer Black Metal All-Weather Clicker Pen (US$15.95) is one of the most useful of all RITR pens and the one included in the various kits. It comes either with black or blue indelible ink that flows fluidly along with your thoughts.

The black 4” Trekker Pen (US$37.95) runs a close second. It has a convenient ring to attach to your keychain so you’ll always have it with you, as long as you’re vigilant and snap it snugly into its holder every time so it doesn’t come off and get lost.

Bullet Pens (US$25.95) are 5 1/4” open or 3 3/4” closed. These are fun to use but tend to fall out of a pocket easily. There are several other All-Weather pens, too, as well as Pen Refills (US$6.95) for any color.

In general, pencils with harder leads work better for taking notes on RITR paper because softer leads tend to smear more. A simple mechanical pencil always remains sharp, but thinner leads snap too often. The newest RITR innovation is one of the best: Tough Mechanical...
Pencils with 1.1 mm lead!

Here's my first impression of my new RITR pencil: It was love at first write with the Yellow Pencil. It seems retro. The slightly thicker barrel is really comfortable to hold. I can use it with confidence knowing my train of thought will never again be derailed by a breaking pencil lead, because this magic lead is indestructible. My only regret is that I didn’t meet this pencil years ago, because it has only just been sung into existence. And there are red ones!

Mechanical Pencils ($10.95) come with extra lead and erasers, and refills are available (Lead: $5.95, Eraser 3 Pack: $5.75). Pencil colors are yellow and black with black lead, and red with red lead.

**INK-JET PAPER**

RITR copier papers have been around for a long time, but WeatherJet Waterproof Paper designed for ink-jet printers and extreme conditions is more recent. Its micro-porous surface turns standard ink-jet inks into permanent, waterproof images, and you can print on both sides. Now you can spill coffee or other liquids all over your bird checklist or write on it in the rain and it will live. The only drawback is that it can only be written on with All-Weather Pens, so marking a tentative bird on your list in pencil doesn’t work as well. WeatherJet Paper ($22.50/25 sheets) comes in several sizes, but 8.5” x 11” is ideal for checklists.

**MORE INFORMATION**

Updated prices, a company history, and cool stories can be found at riteintherain.com. Many of the items mentioned here are shown on the Birding page: from the Home page, go to Products, User Group, then Recreation to find Birding. Look around the site for many more options.

Rite in the Rain products keep evolving and will always remain essential. Anywhere I go, I never leave home without them! 🌧️

Many thanks to my friend Ryan McDonald at Rite in the Rain for providing products for review and for his generous help throughout the years.

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Lessons from a Photo Big Day

In the spring of 2014, Tom Stephenson, Scott Whittle, Sam Galick, and Cameron Cox formed a team that set a new record for number of bird species photographed in a 24-hour period. Driving from Angelina National Forest to Galveston, Texas, and then across the state to Uvalde, they photographed 208 birds. (For details, see the 2014 issue of Birder’s Guide to Listing & Taxonomy.)

Scott and Tom wrote The Warbler Guide and photographed most of the images in that book; in addition, Scott teaches photography workshops in Cape May, New Jersey. Cameron coauthored the new Peterson Reference Guide to Seawatching and did much of the photography for that book. Sam has spent many hours working as a bird counter for the Cape May morning flight, seawatch, and hawk watch, and is always armed with a camera to document birds as they fly by. Among the four of us, there was a substantial base of experience with cameras, lenses, and other bird photography tools. This article outlines our gear choices and lessons learned from our Texas Photo Big Day. We think these general recommendations should be especially relevant for active birder-photographers who move around a lot and/or take photos of birds in flight.

GEAR CHOICES

Canon vs. Nikon • All four of us were shooting with Canon gear. Scott has more than 20 years of experience shooting with Nikon professionally and prefers Nikon in many applications. But after extensive in-the-field comparisons, he finds Canon works better for birds in flight. In addition, Canon has a
wider choice of lenses for bird photography, including the 400 f/5.6 and the 400 f/4 DO, as well as lighter-weight and more hand-holdable long lenses: the 300 f/2.8, 400 f/4, 500 f/4 and 600 f/5.6. Finally, although the highest-end Nikon gear gets comparable focus results, Canon seems to perform better with less-expensive models, such as the 7D Mark II.

**Zoom vs. Fixed Lenses** • Everyone on the team used fixed lenses. The current zoom lenses, with the possible exception of the 70–200mm f/2.8 (which is fairly short for a bird lens) and the very expensive 200–400mm f/4, are not as fast-focusing or sharp as the fixed lenses and just can’t keep up with fast-paced, birds-in-flight photography. (We should note here that the newest version of the 100–400 f/5.6 is quite fast and approaches the 400 f/5.6 in focusing speed and sharpness, but it wasn’t available when we did our shoot.) Zooms like the 70–300mm or the original version of the 100–400mm can be convenient and useful for shooting subjects other than birds, but if the main targets are birds, then a fixed lens is generally a better choice. The 400mm f/5.6 lens, for example, is comparable in cost to the original 100–400mm f/4.5–5.6, but it’s sharper and it focuses faster. With the exception of shooting large water birds up close or going to the Galápagos Islands, where the birds can be just a few feet away, “zooming out” on birds is rarely done.

**Full-frame vs. APS-C Camera Body** • Everyone on the team used a “crop sensor” body, as opposed to full-frame sensor. Scott brought a full-frame 5D Mark III, but he learned a valuable and expensive lesson about checking strap attachments the day before the shoot when his camera body detached from the lens, hit the floor, and was rendered inoperable. Scott’s backup was a 7D; Cameron, Sam, and Tom used 7D bodies. These are all APS-C sensor bodies, which have smaller sensors than full-frame bodies, and in comparison create a “crop factor” that increases the apparent focal length of the lens. With these bodies, the factor is 1.6x, which means that a 400mm lens effectively becomes a 640mm lens.

There’s a tricky balance here, though. Even though the crop-frame sensors create an apparent magnification, the overall sensor quality is usually lower than a full-frame sensor. So if you shoot a full-frame camera like the 5D Mark III and a 7D side by side with the same lens, then crop the image (as we often do with birds) so that

When cropped, the higher quality of full-frame sensors may offset the fact that a smaller area of the sensor is used, and produce a final image that is comparable to a crop-frame sensor. Here, the bird is smaller in the uncropped full-frame shot (top), but when both images are similarly cropped, the quality is about the same (bottom). As a rule, this works with objects that are larger than 1/3 of total frame. For more distant birds, the crop-frame sensor may have the advantage.
the bird is the same size in the final image, the image quality of each may actually be about the same. In other words, the sensor quality difference negates the crop factor. Couple that with the 5D Mark III’s much better low-light performance, and you may actually get better images with that body than with the 7D, despite the fact that the 5D Mark III doesn’t magnify the length of the lens.

If all that is too confusing, just follow the rule of thumb that in low light or with subjects that fill 1/3 of the frame or more, the full-frame sensor (as in the 5D Mark III) is usually better. For objects that are small in the frame, like a distant bird, the crop-frame sensor (like the 7D or 7D Mark II) has the edge. In our shoot, distant small birds were the norm, so a crop-frame sensor usually made the most sense.

THE RIGS

Scott’s setup was a Canon 300mm f/2.8 lens on a 7D body with a 1.4x teleconverter. Cameron, Sam, and Tom all had the same setup: a Canon 7D with a 400mm f/5.6 lens. In terms of the biggest bang for your buck, this rig is hard to beat. The 400mm f/5.6 is a very fast-focusing lens, and it’s light enough to carry all day. The 7D is also pretty quick at focusing and, despite an aging sensor (this camera body is almost five years old now), still holds its own, especially for flight photography. (The 7D Mark II wasn’t out at the time but is now available and has a substantially better sensor.)
Lessons from a Photo Big Day

The one sacrifice you make with a lens this light is that it has only a f/5.6 maximum aperture, so it’s not great at letting in extra light in low-light situations. That, plus the fact that the 7D sensor gets very grainy at ISO settings over 800, means that you have a “slow” setup—in other words, a setup that shoots at slower shutter speeds in any given situation compared to a lens/body combination with a lower maximum aperture, like f/2.8, and a better low-light sensor, like the 5D Mark III. This rig isn’t well suited to low-light situations without a flash. You can always increase the ISO to compensate, but you’ll wind up with fairly grainy photos. On the other hand, for a Photo Big Day, you’re not trying to get pleasing grain, just identifiable photos, so it wasn’t too much of an issue.

The 70D might be a better choice than the 7D, because the sensor seems to handle low light a little more effectively and the body is lighter. One drawback of the 70D is that it has a more limited buffer than the 7D, and it uses SD cards (rather than CF cards like the 7D). These cards are cheaper, but they tend to have slower read/write speeds, and that can limit the number of photos you can shoot continuously. It’s important to get SD cards that will write at least 45MB/second to maximize the number of shots that the 70D takes in a row (which is 7 frames per second), especially when shooting birds in flight. In actual practice, even with the faster SD cards, the 70D can “buffer out” in rapid shooting conditions, leaving the shooter unable to take photos while the camera writes onto its SD card. This rarely, if ever, happens with the 7D or the 7D Mark II. Image quality is marginally better with the 7D, and it also has somewhat less grain at higher ISOs; the 70D could be shot up to ISO 1600 comfortably. Finally, the 70D has a few extra features, such as built-in WiFi, which means that an image can be browsed and uploaded to an iPhone in the field, and then edited and put on Facebook or other social media in just a couple of minutes.

The 7D Mark II wasn’t available at the time, but many us have now upgraded to that body, and are very pleased with it. It’s a major step up in image quality, has better low light performance (by a stop or two), and has improved focusing. We highly recommend it for bird photography. Of course, if your budget allows, you might look at the Canon 1DX, but it is three times the price of a 7D Mark 2, and, while it has better low-light image quality, I actually prefer the 7D Mark 2 for focusing and body weight.

ADDITIONAL GEAR

A few notes on accessories. First, the two tripods in the car never got used. Using a tripod is slow, and it is a liability when shooting birds on the fly or when you’re hopping in and out of a car. In the past, slow film speeds and enormous lenses demanded the use of a tripod. With today’s light lenses and digital bodies like the 5D Mark III, which can shoot great quality images at high ISOs, tripods are often unnecessary. Not to say that they can’t be great when using a 600mm f/4 lens and staking out one spot, or for doing nighttime shooting, but they have become much less useful to the modern bird photographer. The real key to sharpness is to have a high shutter speed and fast/accurate autofocus. If shutter speed is over 1/1600 of a second and the focus is locked on, chances are most of the images will be just as sharp with or without a tripod, and even slower speeds are possible with stationary birds.

Second, because marking the location of each photo was important for the Photo Big Day, the team needed GPS technology. Scott had a dedicated Canon GP-E2 GPS unit attached to his camera, which adds GPS location data to every shot and records the trip route. Alternatively, a traditional GPS device, or even an iPhone, can create a GPS log. The team also used a Garmin handheld GPS unit that kept track of the whole event. The log from a GPS device can then be matched to the time stamp on the photo, and the location can be added after the fact. Software like HoudahGeo (Mac) or PhotoLinker (PC) makes this a fairly straightforward process, but it’s still a somewhat chunky
solution and more prone to error than just having a GPS unit on/in the camera. On the other hand, the Canon GP-E2 retails for about $230, so using the iPhone and some software might be a much more affordable solution. The best solution would be to have GPS units built into every camera, and the 7D Mark II does have this feature.

Finally, all four photographers used Black Rapid shoulder sling straps. These have become quite popular in the past few years; they allow shooters to “quick-draw” the camera and keep the camera out of the way when not needed. It turns out that carrying these setups on a sling strap works well for shooting, but on very rare occasions, if your camera bumps into something like a cell phone or wallet in your pocket, it can trigger the lens release button, and the body can detach. That’s what happened to Scott’s 5D Mark III before the shoot, and since that experience, he keeps a strap attached between the lens and body, so even if the body detaches, it won’t hit the floor. We also recommend a plastic lug (also made by Black Rapid) on the camera body to avoid metal-on-metal wear for that part of the sling.

**RESULTS**

How did the rigs perform? Quite well! For fast, on-the-fly flight photography, the 7D with the 400 f/5.6 actually edged out Scott’s much-more-expensive (and heavier) 70D with 300 f/2.8 rig. The short, light 400mm lens allows for a faster draw and is more nimble at tracking a fast bird. Its size also makes it easier to deal with when shooting from a car. Of course, the 300mm f/2.8 is great in low-light situations, and it showed that strength later in the day. But for fast-flying birds, the 400mm is the winner.

One thing the team lacked was a really long lens. This was partly mitigated by using a set of Zeiss scopes to digiscope the really distant birds. In the future, with several photographers on a team, another option would be to have a range of camera setups. There could be a big lens shooter, with a 600mm or 800mm lens and a 2x teleconverter ready to photograph distant birds. There could be a flight shooter with a 400mm f/5.6 on a 7D Mark II body. And there could be a wider-angle shooter, maybe using a 70–200mm lens to catch close birds flying out of bushes. An interesting idea to consider.

In terms of bodies, it’s a shame that the 5D Mark III was out of the running. Combined with a lens like the 400mm, it could be a perfect setup. The 7D and 70D performed well, and image quality was good enough for these purposes. In terms of shooting birds for more aesthetic purposes, the 5D Mark III outshines both of those bodies by a considerable margin, but it also costs twice as much. We’ve been working with some of the newer camera equipment from Canon, and for a professionally sharp, fast, and light setup that won’t break the bank, the 7D Mark II with the new 100-400 f/5.6 would be our recommendation. For those on a tighter budget, the 70D with the fixed 400 f/5.6 would be a very effective choice.
Although I write about technology for ABA’s Birding magazine, electronics don’t light my circuit board. I spend time outdoors to watch or study or enjoy birds, not fiddle with gizmos. But, like most birders, I do rely on tech tools, both for the preparation of birding outings and in the field.

Which items of birding technology would I miss the most if I had to part with them? How does this set fit together to provide a complete, streamlined, digital toolkit for birding? In other words, what would be my picks for “Ten Tech Essentials”?

Since this article is about “tech tools,” we won’t list a smartphone or laptop as one of those ten tools but will take it from there. My personal list of digital birding essentials is a blend: four birding apps, three pieces of hardware, two ebooks, and a digital subscription.

1 The Sibley eGuide to Birds: If I look at my iPhone in the field, odds are I’m either checking a text message or opening my go-to app, The Sibley eGuide to Birds (iOS and Android, $19.99).

The print version set the standard for field guides with Sibley’s crisp illustrations of multiple plumages for each species. The app wins on clean simplicity while managing to include over 6,000 images, 800 range maps, and thousands of bird songs and...

But everyone has different field guide preferences, so if the Sibley guide never clicked for you, then substitute with iBird Pro or iBird Ultimate (iOS and Android, $9.99–$19.99) or with National Geographic Birds (iOS, $9.99). iBird is more encyclopedic than Sibley, including more reference text material and photos. National Geographic Birds includes brief coverage of some rare North American species absent from the Sibley app. I’d suggest purchasing a portfolio of field guide apps, nabbing them as they regularly come up for sale.

**2 BirdsEye** | Self-described as a “bird finding app,” BirdsEye is a must-have (iOS and Android, free with in-app purchases). I wrote about BirdsEye in ABA’s *Birding* magazine — twice, it’s that fundamental. (See “The ‘New’ BirdsEye: A Second Look,” *Birding*, Nov/Dec 2013, pp. 56–58.)

BirdsEye taps into literally millions of eBird reports and presents rich graphical and spatial details on which birds are being seen where and when. The app is now available for free, with optional in-app purchases if you’d like additional location markers or more regional content. With it, you can see what species other local birders are finding, where birding hotspots are located, and whether any life birds have been reported nearby.

**3 A Digital Camera** | If you already tote a long-lens DSLR camera, then you’re all set. If you don’t own, or don’t want to carry a heavy, expensive DSLR, then a compact “ultra-zoom” camera is indispensable. For a camera, it’s as close as one can come to “dispensable”: with back models available for less than $250, it’s a better risk for a kayak dunk, a cloudburst, or a hotel theft.

Nikon and Canon both make compact ultra-zooms that are popular among birders. The latest Nikon CoolPix model P900 has 83x optical zoom, comparable to a 2000mm reach in a 35mm lens. Yes, you read that correctly: 2000mm of zoom for $600 and 32 ounces. The Canon PowerShot SX60 HS has 65x zoom, equivalent to 1365mm, and weighs a paltry 23 ounces. Various models include extras such as RAW format, geotagging, and WiFi connectivity to transfer images directly to your smartphone.

The weakness of these “prosumer” ultra-zoom cameras is their slow lens speed. The focusing time and shutter mechanisms are no match for professional-level DSLRs. But they pack a lot of cheap reach for identification and documentation.

**4 eBird Mobile** | The original release of the BirdLog app couldn’t have been timed better, with the rising popularity of eBird and the proliferation of smartphones. For dedicated eBirders, BirdLog was a game-changer because you could enter your sightings directly in the field with your smartphone. It is a simple, yet ingenious app.

BirdLog was recently acquired by the eBird team at the Cornell Lab of Ornithology. The iOS version is now offered for free as eBird Mobile. The Android version is still available through BirdLog, free for South America, Central America, Mexico, and Europe, but not yet free for North America or the World ($9.99–$19.99). Proceeds go toward developing an Android version of eBird Mobile. Whether eBird Mobile or BirdLog, the app has worldwide coverage, email of checklists from within the app, and access to edit your eBird checklist. The Trip Summary feature is excellent, automatically tallying daily or customizable totals.

This app is a gem. I can’t imagine a birder who owns a smartphone and uses eBird not using the eBird/BirdLog app.

**5 e-Essential Field Guide Companion** | In 2006, Pete Dunne wrote an *Essential Field Guide Companion*. Nearly ten years later, there is still nothing comparable to this book and Dunne’s eloquent language for describing birds. It delves into insider identification tips for 691 regularly occurring North American species using habitat, behavior, flight, cohabitants, and so on. The title says it all: This book is *essential*, and it’s now available as an ebook.

The original hardcover version is 736 pages and weighs three pounds. The ebook, available for iBook and Kindle, weighs nothing and is always handy on your smartphone. It’s completely searchable, so you can type in “bobo” and immediately see a touch-sensitive list of all pages that reference Bobolink. And on
If you want to supplement with an external mic, consider a tiny "i-mic". The Edutige EIM-003 for iPhone ($54) is finally available again after months of shortages in North America. If you don’t carry a smartphone, consider a tiny, portable, digital recorder, available at big-box electronics stores.

**Phonescope Adapter** | Phonescoping is currently all the rage. Whether this trend will last, or be superseded by alternate technologies such as cameras within scopes or binoculars, time will tell. But for now, physically clamping your smartphone onto your spotting scope is the game.

There are three problems with smartphone + scope. First, many of the connectors (called phonescoping adapters) are downright kludgy. Second, the adapters are endlessly chasing the latest smartphone size specifications. A smartphone upgrade means another pricey adapter—and they typically cost between $50 and $100—relegated to your drawer graveyard of phonescoping pieces. Third, many of the adapters are not compatible with field-appropriate protective cases that birders need outdoors.

With the advent of the internet, it’s now Birds of North America Online, accessible via individual subscription of $42/year (or $5 for 30 days). But wait! Depending on your city or county’s library system, you may already be paying for a subscription through your property taxes. For example, my home library has a subscription, which I can access for free through the county library’s database holdings using my library card as a log-in. Check with your reference librarian.

Once you have access, you won’t believe the treasure trove of information. Did you ever wonder if female Marsh Wrens also sing? Did you know that multiple female Smooth-billed Anis lay in a single nest, covering the previous eggs with twigs and leaves? Pick a species that you see today and look it up in BNA Online. You’re guaranteed to learn something.

If you want to supplement with an external mic, consider a tiny “i-mic”. The Edutige EIM-003 for iPhone ($54) is finally available again after months of shortages in North America. If you don’t carry a smartphone, consider a tiny, portable, digital recorder, available at big-box electronics stores.

**The Warbler Guide App** | I recently wrote a full-length article about The Warbler Guide App. (See “The Warbler Guide App,” Birding, April 2015, pp. 60-63.) I’ll stand by the subtitle of that article: Could this innovative app revolutionize our field guides? It not only raises the bar for birding app design and implementation, it’s the start of a potentially new class of digital field guides customized for a genre of birds.

Every birder who enjoys warblers or is interested in studying warbler identification should get this app.

**Birds of North America Online** | Many birders are unfamiliar with “BNA,” as it’s often called. Birds of North America was a voluminous reference text that aggregated the state of knowledge of North American birds as gleaned from the scientific literature. If you’d like to delve deeper than simply putting a name on a bird, then BNA is a great asset. It’s an encyclopedia of each species’ behavior and systematics, with in-depth coverage of topics such as breeding, molt, and food preference.

With the advent of the internet, it’s now Birds of North America Online, accessible via individual subscription of $42/year (or $5 for 30 days). But wait! Depending on your city or county’s library system, you may already be paying for a subscription through your property taxes. For example, my home library has a subscription, which I can access for free through the county library’s database holdings using my library card as a log-in. Check with your reference librarian.

Once you have access, you won’t believe the treasure trove of information. Did you ever wonder if female Marsh Wrens also sing? Did you know that multiple female Smooth-billed Anis lay in a single nest, covering the previous eggs with twigs and leaves? Pick a species that you see today and look it up in BNA Online. You’re guaranteed to learn something.

Fortunately, this no longer means totting around a clunky recorder and parabola. Many of the built-in smartphone mics are very good, just as smartphones have engineered astounding camera quality. So for most of us, it will suffice to simply have a smartphone accessible and know how to quickly activate its recording features.
There are a slew of phonescoping adapters. Meopta came in early with adapters for a range of optics brands. Lately, the optics manufacturers themselves have jumped in to custom-fit their own models, with mixed results. A new adapter, the PhoneSkope, is worth a look. It shows more engineering foresight than many of the optics companies’ models. For example, it is compatible with rugged and waterproof LifeProof and Otterbox cases. This is a big improvement over the old scenario of forfeiting waterproof protection or prying off your rugged case every time you want to phonescope.

**10 Rare Birds eBook** | My final pick delves deeper into the birds of North America. What if someone starts talking about the Collared Plover or Tufted Flycatcher? No field guide app, nor Dunne’s Essential Companion, nor BNA Online will cover you for all the rare birds. And birders love rarities. Howell, Lewington, and Russell's incredibly detailed and wonderfully illustrated book, *Rare Birds of North America*, is now available as an ebook for Kindle, iBooks, Nook, and Google Play. Here you can study ahead, have field guide coverage for a stake-out, or armchair bird a future rarities trip—all on your phone or tablet.

**And There's More** | I've selected ten digital birding tools I'd hate to part with. Sure, five or ten years ago I didn't own any of these. But now they do seem indispensable. And these ten are just the start. Today you can carry a milk-crate's worth of field guide apps for under $50. You can build your own digital bookshelf of reference volumes. You can add a couple of lightweight electronic gizmos to your pack and radically transform your ability to capture sound and photograph distant birds. Only a handful of technology items—yet everything is different.
2016 ABA Young Birder Camps

Camp Colorado I • July 16–22, 2016
Camp Colorado II • July 25–31, 2016

YMCA of the Rockies • Estes Park, Colorado

Due to increased demand we are thrilled to offer two sessions of Camp Colorado in 2016! Join us as we explore Colorado from grasslands to glaciers! From the shortgrass prairie of northeastern Colorado to the aspen groves and alpine tundra of Rocky Mountain National Park, Camp Colorado has it all!

Camp Fee: $1295.00 includes all lodging, meals, transportation during camp events, instructional sessions and shuttle to and from Denver International Airport.

Camp Avocet • July 30–August 5, 2016

The Virden Center • Lewes, Delaware

Now in its fourth year, Camp Avocet is based at the University of Delaware’s stunning Virden Retreat Center in historic Lewes, Delaware, only minutes away from two major National Wildlife Refuges and a short ride to six, ecologically-based birding regions. Looking for shorebirds? This is the camp for you!

Camp Fee: $1295.00 includes all lodging, meals, transportation during camp events, instructional sessions and shuttle to and from Philadelphia International Airport.

Questions? Need more details?

Visit us • events.aba.org/aba-young-birder-camps
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• ABA Camps are open to all young birders aged 13 to 18.
• Fabulous field trips led by the ABA Staff and guest instructors will be punctuated by terrific educational 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 aba.org/yb/scholarships.html for details.
Josh Beck is all geared up for birding in the Amazon rainforest near Mitú, Colombia.

Photo © Kathi Borgmann
Ah, birding in the Neotropics… Brilliant toucans, shocking tanagers, wonderful woodpeckers, amazing antbirds, and so much more. Who doesn’t want to hop on a plane right now just thinking about those awesome species? Well, tropical climes can also be hot, buggy, and uncomfortable if you are not prepared. I have spent the last two years birding from Mexico to Ecuador, and I’d like to share a list of items that I think are indispensable. The right gear can make all the difference between remembering an incredible bird or remembering feeling miserable when you get home.

Josh Beck and I are on a birding expedition through the Americas. We are documenting everything we see in eBird, writing stories from the field on our blog (birdsofpassage.wordpress.com), and recording bird sounds for the Macaulay Library at Cornell University. Throughout our travels, we aim to share as much information as we can from bird behavior to where to find birds (see Josh’s article on seeing and finding avian unicorns in Middle America in the 2015 issue of Birder’s Guide to Travel). This is the first in a two-part series that aims to help you be prepared for birding in the tropics. The second, about mental preparation and study, will appear in the 2016 issue of Birder’s Guide to Travel.

**Nylon clothing** • A long-sleeved nylon shirt and a pair of nylon pants are essential for any trip to the tropics. I guarantee that you will wear them nearly every day. Nylon is lightweight, breathable (essential in the steamy tropics), and, best of all, mosquitoes have a hard time biting through it. A
Gearing Up for a **NEOTROPICAL** Adventure

A long-sleeved shirt in 90 degrees of heat and humidity might sound unbearable, but if you dislike chemical insect repellents and mosquito bites, this is your best option. Short-sleeved nylon shirts are also great when the bugs are at a minimum but it’s still blisteringly hot, because cotton t-shirts just do not seem to keep you as cool as nylon. Make sure that your shirts and pants are not too tight-fitting; you don’t want your shirt sticking to your hot and sweaty arms as you try to lift your binoculars to see a lifer.

**Warm clothing** • Who needs warm clothing in the tropics? You, if you plan on heading up in elevation: it gets chilly quickly. You will be pleasantly surprised how much elevation affects temperature in the tropics. At just 5,000 ft (1,500 m), you’ll probably be ready to throw on an extra layer, especially in the early mornings. Bring along a fleece or other warmer top if you plan on birding in the highlands. A pair of gloves and a warm hat will be welcome the higher you go, and a pair of long underwear might also be a good idea.

**Bandana** • Bandanas are the multi-tool of clothing. They can be used for just about anything (towel, first aid, sun protection, bug protection, tissues, wash cloth, etc.), and they will definitely come in handy on your birding trip. As I trudged up Cerro Pirre in Darién National Park in Panama, I wiped my brow with my bandana every 10 minutes just so I could see through the sweat dripping off my face. Every time I crossed a creek, I soaked my bandana in the creek and draped it across the back of my neck for a little relief. Bandanas are great for emergencies, too. Josh fell in a creek and tore his thumb nail off when we were miles from any services. I wrapped his thumb in a bandana to protect it and contain the bleeding. It worked like a charm.

**Footwear** • Everyone has a favorite pair of shoes; just make sure they are comfortable and bring along a waterproof pair. Even if there is no rain, water from damp and dewy grasses can soak through to your feet in no time. In addition to a good pair of walking shoes, you will want to bring along a pair of sandals (preferably ones that can get wet; i.e., no leather) to let your feet breathe at the end of the day and for use in the shower. In my experience, some showers are not particularly clean.

**Rubber boots** • If you are going on a guided trip, you probably could get away without having rubber boots, but if you are going solo, I strongly recommend you bring a pair along or pick some up as soon as you arrive at your destination. Rubber boots can be surprisingly cheap in Latin America, but if you have an odd or large foot size, it is probably better to bring some from home. Even if you are going during the “dry” season, it can rain at any time, and some trails can become impassable without rubber boots. Yes, they are hot and uncomfortable, but hauling around wet, muddy sneakers can be even more unbearable—not to mention the unpleasantness of putting on wet, smelly shoes the next day. Rub-
ber boots also provide an extra layer of protection against snakes.

**Bug protection** • Mosquito-borne illnesses, such as malaria and Dengue fever, can ruin your trip, so it is wise to use bug protection whether it be long clothing or bug spray. Before you go, check for information at the Centers for Disease Control and the World Health Organization to learn about potential risks in the locations you plan to visit, and always talk to your doctor. In some areas, you may want to take anti-malaria pills or get vaccinated against yellow fever, hepatitis A, and/or typhoid, so it is important check with your doctor.

Thankfully, there are now numerous non-DEET options to repel mosquitoes and other little annoyances. We have had good luck with Repel Lemon Eucalyptus Natural Insect Repellent. We also tried Sawyer Picaridin Insect Repellent (available at REI), which we found worked well despite having a funny smell. Straight Citronella-based products do not seem to do much for us. You can also buy nylon clothing impregnated with permethrin, which helps repel mosquitoes, or you can buy permethrin and apply it to nylon clothes yourself. In our experience, permethrin-treated clothes really do help reduce the number of bites, but permethrin will disappear from clothes after approximately 70 washes, and in really buggy areas, you will probably also need to apply extra bug spray. Remember, it is usually not wise to spray DEET directly onto your nylon clothes, as DEET could ruin some of your clothing, as well as damage binocular armor. No matter what, you will probably end up with a few bites, so if you are sensitive, I recommend bringing along some antihistamine gel like Benadryl to soothe the itches.

**Sulfur powder** • We learned about this one the hard way. Perhaps some of the most annoying bugs in the tropics are chiggers—those nearly invisible things that crawl up your pants and head for moist crevices, giving you an itch that lasts for a week or more. The best way to prevent chiggers is to not walk in tall grassy/weedy areas, but for birders, this seems nearly impossible. If you are going to be walking through heavy grass, weeds, or agricultural areas, dust your shoes, ankles, and pants with sulfur powder to dissuade chiggers from latching on. If you do not have sulfur powder on hand, bringing back the ‘80s by tucking your pants into tall socks or wearing rubber boots can help. And perhaps more importantly, shower as soon.

**Sun protection** • Sunscreen is also a no-brainer, but just remember to bring your favorite sunscreen with you on the trip because sunscreen is expensive outside of the U.S. And do not forget a wide-brimmed hat—a necessity for sun protection.

Josh is enjoying birding in the rain and staying dry under his umbrella. Photo © Kathi Borgmann
Gearing Up for a **NEOTROPICAL** Adventure

as possible after contact with vegetation, and don’t wear the clothing again without first washing it in hot water.

**Personal items** • This one is for the ladies. All too often on birding trips, bathroom stops simply do not exist. That means hitting the trees, which is normally not a big deal. However, in group situations or in public areas, finding a suitable place can be challenging. I remember birding the Achiote Road in Panama, along a busy section of highway with no convenient patch of trees to duck into. There was no place to go. After my morning coffee and plenty of water, I certainly could not focus on birding! I ended up in a roadside ditch with grass up to my waist. It was a good thing that patch of grass was chigger-free! It can be really hard to enjoy the birds when you have to go, so I recommend taking along a little device that can help during emergencies. They go by various names, including Go Girl, Lady J, P EZ, big deal. However, in group situations or in public areas, finding a suitable place can be challenging. I remember birding the Achiote Road in Panama, along a busy section of highway with no convenient patch of trees to duck into. There was no place to go. After my morning coffee and plenty of water, I certainly could not focus on birding! I ended up in a roadside ditch with grass up to my waist. It was a good thing that patch of grass was chigger-free! It can be really hard to enjoy the birds when you have to go, so I recommend taking along a little device that can help during emergencies. They go by various names, including Go Girl, Lady J, P EZ, and more. Check out the full review of these products in the December 2014 issue of Birder’s Guide to Gear. Oh, and do not forget to bring toilet paper and bags to pack it out.

**SteriPEN** • Plastic water bottles are wasteful, but when you are traveling and need water, you end up buying more plastic water bottles than you would like to admit. That can be a thing of the past thanks to SteriPEN. A SteriPEN is a relatively inexpensive ($50–$100) little device that runs on a few AA batteries or recharges via USB. It sterilizes water with ultraviolet light that destroys bacteria (such as Shigella and E. coli), viruses, and protozoan cysts (such as Giardia). You can fill any reusable water bottle from nearly any tap as long as the water is not cloudy or full of sediment, zap it for one minute, and you are done. Purified water without the plastic!

**Waterproof bag** • Rain in the tropics is often unavoidable, so it is handy to have a small waterproof bag in which to store your wallet and electronic devices. If you are carrying recording equipment, a camera, or other larger electronics, a good dry bag such as a Sea to Summit Big River Dry Bag, is essential. A “dry bag” is a large, watertight, heavy-duty plastic bag that, when properly used, should keep its contents dry even when at the bottom of a lake or river.

**Umbrella** • For years, I avoided umbrellas like the plague because they always broke. But after birding in the tropics with wet optics, wet glasses, and a hot sticky rain jacket glued to my arms, I am starting to come around. Rain jackets keep your top half dry but do not do much for your pants or foot-wear, and they are uncomfortably hot! I watched with envy as some companions birded comfortably in the rain with an umbrella while I was sweating it out and still getting soaked from the waist down. Despite losing a hand to hold the umbrella, you will be more comfortable and most likely much drier. If you don’t mind carrying it all day, a nice sturdy umbrella with large coverage is the best choice. As a backup, or if you really do not like umbrellas, I would recommend bringing a poncho instead of a rain jacket because they have better coverage (they even fit over your backpack) and better ventilation.

**Notebook** • I still bird the old-fashioned way with my trusty notebook. I find a notebook much easier to use than fumbling with my cell phone. I find it difficult to type on the keypad, and scrolling through the list of species can take way too long. I’d rather jot a quick note down in my notebook and keep looking for birds. Moreover, your list is dependent on battery life if you use a cell phone; with a notebook you never have to worry about running out of power. The other problem with digital applications is cellular coverage. Although you can create off-line checklists, cell phone coverage is not always good in many places, and the number of possible species is tough to manage elegantly on a smartphone logging app. I prefer good old paper and pencil. I love the Moleskine lined pocket notebooks; they are sturdy and just the right size.

**Lens-cleaning supplies** • If you wear glasses (well, even if you do not), bring a LOT of lens-cleaning supplies (chamois, lens-cleaning spray, lens pen, and lens wipes). You don’t want to finally see the bird you have spent hours waiting for only to have the grime on your glasses and binoculars make the bird look like it has extra spots and lives in a cloud. Tropical heat, humidity, and your sweat
will get your optics grubby far faster than you would believe, and it is important to keep your gear clean. We brought lens spray for thorough cleaning and lens wipes for quick cleaning, as well as lens pens and several chamois. Chamois get grimy quickly, so be sure to give them a quick clean now and again with a mild grease-cutting soap and hot water.

**Laser pen** • A laser pen/pointer can be really helpful, especially when you are birding in a group. Having the ability to easily point out a bird can reduce a lot of frustration. We still try to describe where a bird is located using the clock method, but sometimes a bird can really be buried in a thicket and hard to describe. That is when a laser pen is handy. Laser pens, however, should be used carefully, and they should never be pointed directly at the bird, another animal, or a person. For birding, a green pen with an output in the 5mW range is appropriate; higher power pens can damage vision and really are not necessary.

**Playback equipment** • Many people who go birding in the tropics use playback to draw out shy and furtive species, which is more of a necessity than at temperate latitudes. Any current smartphone will work to broadcast recordings of bird songs and calls. If sometimes you need a little more volume, a small portable speaker will certainly help. Various models and brands exist, so shop around for one that works for you. In my experience, speakers that recharge via USB are the most convenient, and Bluetooth wireless speakers are becoming more common, eliminating the need for a cable.

**Flashlight or headlamp** • Electricity is not always reliable in the Neotropics, so having a flashlight or headlamp is a must if the power goes out at your hotel. And of course, you will want a light to go hunting for owls and other night critters. We recommend Fenix flashlights. If you have not seen a modern high power LED flashlight, you will be amazed. These guys are bright (and I mean really bright!) relative to their size and weight. We use the Fenix TK41, and it has never let us down. Fenix also makes slightly smaller lights that are excellent, too.

**Maps** • If you are renting a car, you will need maps, but paper maps are hard to come by for some places, and those random dirt roads where the birding is are frequently not on the large-scale paper maps that are available for many countries. Thankfully, you can purchase offline (no cell service required) mapping applications for your smartphone. Many apps have much greater road detail than paper maps. We use Skobbler and Maps with Me Pro to navigate to birding destinations and to get through urban areas. Both applications will show your current position on the map and will allow you to enter GPS coordinates that you can then navigate to. Skobbler provides voice navigation, while Maps with Me Pro will show you the route but without voice navigation. The best part about Maps with Me is that it allows you to record your current position/
coordinates, which is handy for entering your lists into eBird.

**Power** • If you have a lot of gadgets that need to be charged every day and you plan on traveling in areas with limited electricity, you may also want to take along a portable power bank and a portable solar charger. Both (available at REI and Amazon) can charge any device that can be charged via USB. To charge the portable power bank, you can either hook it up to a portable solar panel, like a Goal Zero Solar Charger, or to an electric outlet.

**Extras** • I recommend stashing a few of your favorite energy bars in your backpack, especially if you have any dietary restrictions. While prepackaged foods are widely available, having something familiar and tasty is a welcome accompaniment to your list of lifers. Take only processed, pre-packaged foods, though. Anything unlabeled and/or perishable is likely to get you in trouble with customs.

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**Statement of Ownership, Management, and Circulation**

**Birder’s Guide**

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**Gearing Up for a NEOTROPICAL Adventure**

**Birding a muddy trail in Costa Rica**

**Photo © Keith Boydman**

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