

SOFTWARE AND BOOK REVIEWS

DIGITAL REVOLUTION IN PACKAGING RECORDINGS OF BIRDS

Audubon Birds—A Field Guide to North American Birds, Version 1.3.1, by Green Mountain Digital. 2010. www.audubonguides.com.

BirdJam, by MightyJams, LLC. 2010. www.birdjam.com.

iBird Explorer PRO, Version 2.3, by Mitch Waite Group. 2010. www.ibirdexplorer.com.

National Geographic's Handheld Birds, Version 1.0.0, by National Geographic Society. 2009. www.handheldbirds.com.

The Sibley eGuide to the Birds of North America, Version 1.01, by Cool Ideas, LLC. 2010. www.mydigitalearth.com.

There are many reasons birders and field ornithologists use pre-recorded bird sounds in the field, and we used to have but one option: a tape player and cassette, and our choices for sounds were limited to a very few commercially available recordings or our own. Through a dizzying series of technological steps over the past 20 years, we have arrived at solid-state digital players, the most advanced today being the popular iPod Touch.

For those who are unfamiliar with this gizmo but know what a regular iPod is (classic, nano, or whatever), there is one basic difference: whereas older iPods and other mp3 players are capable of very little other than playing sounds (or displaying photos or even video) that were uploaded from a desktop or laptop computer, an iPod Touch is like a miniature computer with a wireless internet connection. Just as your desktop computer allows you to create memos, play video games, read your e-mail, and surf the web, so does an iPod Touch, just on a more limited level. Not to make things confusing, there is also the iPhone, which is nearly identical to an iPod Touch, the added function of a cell phone being the most obvious difference.

In this review, I compare five products for the iPod Touch (Table 1); four are stand-alone applications (called “apps” by iPod users), while the fifth is a product that merely adds a function to the iPod application called Music, which is essentially the same as iTunes. The four applications have multiple features that make them more like a field guide (such as photos, drawings, range maps, and other identification aids and information); here I look only at their utility related to the playback of bird voices. In

Table 1 Comparison of Five Applications Providing Recordings of Bird Sounds through the iPod Touch

	Audubon	birdJam	iBird	NGS	Sibley
Time to reach species list (sec)	15	3	9	6	12
Time to reach a species (average of seven species; sec)	29	11	17	13	21
Number of clicks needed to play song (browsing excluded)	6	3	3	3	5
Average length of recordings (sec)	43	28	11	20	43
Average number of vocalization types	4	2	1	2	4
Progress bar shown?	Yes	Yes	No	Yes	No
Source of recordings	Stokes and Martyn Stewart	Stokes	Martyn Stewart	Cornell	Stokes and Martyn Stewart

judging how well these applications work, rather than trying to cover every imaginable use one might have for bird sounds on an iPod, I start from the assumption that the user has a species in mind and simply wishes to play a vocalization. From there, the existence of that species in the application, the ease and speed of getting to it, the number of vocalization types available, and the quality of the recordings are the focus of my review. I offer subjective comments on the general use of each application, especially its user-friendliness in the field.

One might wonder what makes any of these tools any different from just playing bird sounds uploaded to your classic iPod, and the answer is “not much.” Assuming that the source of your recordings is one of the many commercially available CD sets, the primary difference is that with these iPod applications, the announcement of the species name has been removed. The added functions of the newer iPod Touch also allow for more information about each track to be displayed, whereas formerly all you saw was whatever information was included with just the track, album, and artist names that scrolled across the iPod screen upon playback.

I'll start off by describing birdJam, which stands out from the rest in not actually being its own application but rather a utility that adds a function to the Stokes CDs for North America (Elliot et al. 1997, Colver et al. 1999). You must first actually own a copy of this CD set and have it uploaded to your computer's iTunes program. Then, once you upload birdJam, it does in just a few minutes what would otherwise take you days with sound-editing software (e.g., Raven, Amadeus, Audacity): it edits the information in each track so that playback begins after the voice announcement. For those tracks that included two species, a duplicate copy is made so that each species has its own track (I remember once being driven mad by not being able to find MacGillivray's Warbler on my iPod; it turns out it is the latter half of the Stokes Northern Waterthrush track). BirdJam also puts a phonetic description in place of the artist's name, the scientific name as the album information, and what would be lyrics appear as notes about the recordings, such as a more thorough description, subspecies, location, and season of the recording. Furthermore, the common names are repackaged in index style so that the group name appears first, and one scrolls down a list that goes from Bittern, Least, to Blackbird, Brewer's, and from Swift, White-throated, to Tanager, Hepatic.

The other four applications come with their own system of organizing and presenting data and are uploaded with a full set of self-contained recordings. You start each of them by clicking on the icon on the iPod's main screen. After the application loads, you then have to navigate to the species you want (by either browsing a list or searching via a virtual keypad), which then brings up only the species account; it's then another click or two before you actually play the vocalization.

Speed of Access and Playback Looping

Getting to a particular recording quickly is always important to me. I timed myself how long it took with a not-so-random set of species: the Rufous-crowned Sparrow, Montezuma Quail, Lazuli Bunting, Brown-crested Flycatcher, American Wigeon, Hutton's Vireo, and Whiskered Screech-Owl. I also timed how long it took to play the species that appeared first when I started the application. The primary difference between birdJam and the other four applications is that birdJam does not have species accounts, so the vocalization begins playing the moment you click on the bird's name—but it also does not have a search function. This means that though any recording is no more than three clicks away, you need to be proficient at scrolling, something that takes practice. If you're good, birdJam is by far the quickest of the applications—up to five times faster than the slowest. One more difference that stands out with birdJam is that it's easy to tell the iPod to loop a track; without having to touch or look at the iPod, one could play a track for, say, a 90-second broadcast survey. None of the other applications have this option, and once the

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cut is finished playing, you must click on it (on some twice) to play it again. Among the other four applications, speed of access varied with the size of the application (which affects how long it takes to upload) and how many screens you have to click through. Those applications that brought up a list of species as the first screen (NGS and iBird) were the fastest, while the Audubon application took the longest, with a large database of sounds and the necessity of having to click through several layers to get to the sounds.

Quality and Source of Recordings

The recordings are all of high quality, as they are derived from pre-published sources and professional recordists. The NGS application is the only one that has a set different from the others, taken from the Cornell Lab of Ornithology's Macaulay Library—the Rufous-crowned Sparrow and Montezuma Quail are the same recordings by Geoff Keller used on Keller (2001) and Cornell's CDs for southeastern Arizona and northwestern Mexico, for example. All the others share some or all vocalizations: birdJam is strictly from the Stokes Field Guide to Bird Songs (both western and eastern regions), while Audubon and Sibley (which share exactly the same set of recordings) provide a combination of some cuts from the Stokes guides and recordings from Martyn Stewart. All but iBird actually give credit to their sources, so I had to compare recordings of several species to figure that one out, and it appears that iBird simply uses recordings from Martyn Stewart, and, for the ones I checked, they are the same recordings included in the Audubon and Sibley apps. The only drop in quality I noticed was a tinny, filtered sound in some cuts, such as those of the Rufous-crowned Sparrow and Lazuli Bunting, on the NGS application.

Species Included

While all five applications appear to include every bird breeding regularly in North America (except Audubon and Sibley are missing the White-tailed Ptarmigan for some reason), iBird is the most thorough for species coverage. It is the only one to have Nutting's Flycatcher, for one example, and it is the only one to include all three of the Streak-backed Oriole, Black-capped Gnatcatcher, and Red-throated Pipit; among the other applications, birdJam and NGS have two of the three, while Audubon and Sibley have none of these rarities.

Length and Variety of Recordings

It is in these variables where these products differ the most, I think, each has strengths and weaknesses. In a comparison of the seven species considered above, the Audubon and Sibley apps (remember, their database of recordings is identical) offer the most in the number of recordings, total length of recordings, vocalization types, and how their information is presented. Each vocalization type, whether represented by examples of different song types, songs from different populations, or call notes, receives its own track and is clearly labeled. The birdJam recordings usually have a good variety of vocalization types represented but are included in one long track. The NGS and iBird applications similarly have only one track, but NGS has fewer vocalization types (generally two, such as a song and a call), and iBird includes just one short cut, usually limited to one song type for each species.

Added Information

Some of the applications include further information on the vocalizations. As mentioned above, Audubon and Sibley do this well. BirdJam does sometimes include information on subspecies, location, and time of year, but only irregularly (and it is not always correct; for the Lazuli Bunting, the information given is actually from the Indigo Bunting track). NGS offers the least information, with comments such as "songs" or

“calls” being the limit; hardly better is what iBird offers—a phonetic transcription of the song, which is often close to no use at all (such as “chip-chip,” “deer”) for the Rufous-crowned Sparrow.

User Interface

Finally, some general comments on how these applications work overall. BirdJam is the most straightforward, especially if you’ve used an iPod before or even have used iTunes on a computer. Bird sounds are organized by playlists (the most useful for me is one with all the birds of North America organized alphabetically), and you merely browse the list and click on the species you want.

iBird isn’t that much different when it comes to finding the species you want, and it’s straightforward to play the sound by clicking on the icon that looks like a speaker. But once the cut is over it’s not obvious how to play it again. It turns out you must click on the bird name under the list of “similar sounding” species to uncheck it, then click on it again to choose it; the speaker icon remains but is no longer active on that screen unless you navigate away and then back—so in any event replaying the song is still two clicks away. Also, there is no progress bar, so you can’t know where you are at in the recording or how long it is.

NGS works in a similar way, with a “play” button available on the first screen, from which you hear the recording but have no other controls or information. If you scroll down, there is an “audio” button that brings up a screen with a progress bar, play, pause, and stop buttons, and volume control. I find this a little more user-friendly, but the lack of information on where the recording was made is not good.

Sibley has one more click on a main menu before you can see a list of birds, which is annoying (you have to choose whether you want to browse them taxonomically, alphabetically, or do a search; the previous two applications allow you to toggle between similar options with small buttons on the first screen). After that extra click, it’s then much like the others with the icon to play the vocalizations being an eighth note. Clicking on this icon starts the sound right away and brings up a screen with a clever scrolling dial that lets you choose among the various vocalization types. Each one is labeled as a song, call, etc., and with an abbreviation of the state or province where recorded (usually, in any event; this is missing from Harris’s Sparrow, and I looked at only a few species). Each cut stops at its end and cannot be played again without scrolling away from it or clicking on the eighth-note icon twice. There is also no progress bar.

Finally, the Audubon guide has the most laborious process of getting to the actual bird recordings. Since the application comes with additional references on other branches of natural history, once it loads you first have to click on the one for birds. Then, as with Sibley, you must click on which format you wish to browse (taxonomic, alphabetic, etc.). Once you finally get to a species list and click on the species name, clicking on the sound icon (another eighth note here, but with the word “voice” next to it) brings up the page that lists the available sounds but does not start playing the sounds – that is yet one more click away on the arrow next to each cut. There is a progress bar, each cut is labeled with vocalization type and location, and the duration of the recording is indicated, all positive features. It requires one click to replay any of the cuts.

In summary, none of these apps is perfect, and for my own use I’ll probably be spending the time to edit and label recordings manually with sound-editing software and create my own playlists. The perfect application would combine the simplicity of BirdJam (and its ability to loop tracks), the species coverage of iBird, the variety of recordings and separated vocalization types from Audubon, the user interface of Sibley, and the speed of NGS.

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Rich Hoyer

BOOK REVIEW

Birds of Wyoming, by Douglas W. Faulkner. 2010. Roberts and Company Publishers, Greenwood Village, CO. 404 pages, at least 250 color photos, 242 range maps. Hardback, \$45.00. ISBN 978-1-936221-02-8.

Birds of Wyoming is a handsome book with a color photo of a Great Gray Owl on the cover. It is a grand first attempt to summarize the distribution and status of birds in one of the most lightly birded states in the nation. The entire human population of Wyoming is only about 550,000, with a land area of roughly 100,000 square miles.

The book seems to show considerable bias toward the eastern half of the state and would have benefited from a year's delay and input from western Wyoming birders/ornithologists. Inside the front and back covers is a map showing Wyoming's counties and 67 well-known birding localities. There is no table of contents, which would have made finding a species account easier, as the accounts are somewhat arbitrarily categorized by "resident" and "non-resident" species. There is, however, an index at the back of the book with scientific and common names.

Each of the 242 "resident species" gets a full page (often leaving unused space), a color photo (usually of a breeding male), and a color-coded distribution map (yellow for summer, blue for winter, and green for year-round). The maps are rather coarse and vague with many gaps, especially in the west. For example, the Rough-legged Hawk, Northern Shrike, Black-billed Magpie, Mourning Dove, and Eurasian Collared-Dove are all found in the Jackson area, where the maps show white gaps on the maps.

Each species account has a discussion of seasonal status, taxonomy, and subspecies if relevant, distribution, and conservation status. The last is a code maintained by the Wyoming Game and Fish Department for the status of native species and ranges from 1 through 7 from the most to least threatened in the state. Only species ranked NSS1 through NSS4 are considered priority species and have their code listed in this book.

There are 184 "non-resident" species, which include regular migrants, winter residents, and truly rare species. These are covered in the back third of the book at two per page, with no pictures or maps but with the same status categories as the resident species. Then follows a list of 28 species for which the Wyoming Bird Records Committee has insufficient evidence. This committee has been in existence since 1988, but the book does not refer to its website.

Finally, there are 14 pages of references with about 580 citations. These provide a tremendous historical summary of Wyoming bird distribution.

The front of the book contains six short essays by knowledgeable ornithologists that add considerably to an understanding of bird distribution. The history of Wyoming ornithology is described in 12 pages by Jane Dorn. We learn that Thomas Nuttall and John Kirk Townsend crossed the state on the Oregon Trail in 1834, collecting the Mountain Plover and Sage Thrasher that first introduced those species to science.

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Many collections were made by the railroad surveys and by surgeons at early forts. C. Hart Merriam joined a collecting party in the Tetons and Yellowstone area in 1872 at the tender age of 16. The Game and Fish Department began an atlas of Wyoming bird distribution by latilong in 1976.

The conservation of birds in Wyoming is discussed by Bob Oakleaf, Andrea Orabonn, and Alison Lyon-Holloran in five pages. Global warming may kill off 20% of the conifers in the state, so special attention should be paid to the Brown Creeper and Northern Goshawk. Habitat fragmentation from oil and gas drilling is frightening—in 2000 there were 12,477 producing wells, but by 2007 it was projected that 58,000 new wells would be drilled in the state. Populations of the Greater Sage Grouse have been in decline since the 1930s, but all this new development may well render it an endangered species.

Richard Hutto uses two pages to ask whether stand-replacement fire is good for the birds. Most fires at mid- to high elevations indeed replace most of the forest, and there are fifteen species, such as the Black-backed Woodpecker and Mountain Bluebird, that increase after fires. As practiced, most logging is a poor substitute for replacement fires, as it leaves few snags standing. Hutto does a good job of helping us understand fire ecology and how it affects bird populations.

Terry Rich discusses the sagebrush habitat in a wonderfully aesthetic two-page essay. He suggests that the Greater Sage Grouse would be an excellent umbrella species for the protection of other birds restricted to sagebrush, such as the Sage Sparrow, Brewer's Sparrow, and Sage Thrasher. The grouse needs large preserves where such disturbances as off-road vehicles, fences, invasive weeds, livestock, power lines, wind farms, and drilling roads and rigs are at a minimum. In short, he suggests we need a Sagebrush National Park.

Management of short-grass prairie is discussed in two pages by Scott Gillhan. Populations of grassland birds are declining faster and across a wider area than those of any other group of birds. Prairie dogs provide habitat for nesting as well as prey for a whole suite of birds, and they are still being poisoned. Gillhan lists fourteen specific management practices that are needed, including control of invasive weeds, maintenance of large patches, rotational grazing, and limiting invasion by trees.

Finally, Robert Dorn provides an excellent three-page discussion of Wyoming's landforms and vegetation, which gives an overview of the state's varied habitats and their distribution. He again emphasizes the negative effects of fragmentation, development, drilling, and livestock grazing in a very dry environment. All these chapters should be required reading because they add depth to the understanding of bird distribution not only in Wyoming but in much of the West.

All in all I would say that this book is a pretty good first attempt at the Birds of Wyoming. Knowledge of Wyoming bird distribution can be expected to grow rapidly because of it, as well as because of reports to e-Bird and an effective Wyoming list server. As Paul Lehman says on the back cover, "Every serious student of bird distribution in North America should own a copy."

Chuck Trost