

Sharing your bird sightings to help conservation

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In the second contribution to our *Better Neotropical Birding* series, we examine how birders can—and should—use the internet to enable conservationists to make use of information that might otherwise gather dust in notebooks.

Birders love to talk about what they see. But sharing sightings with one another is not only one of the more fun aspects of birding; it is also becoming an important form of ‘citizen science’, whereby birders contribute information of use to other birders, ornithologists and conservationists. For several years, birders have been able to share their sightings on various e-mail list-servers or to post trip reports online, but there have been few central repositories or databases where individuals could both enter their own sightings and query the observations of others.

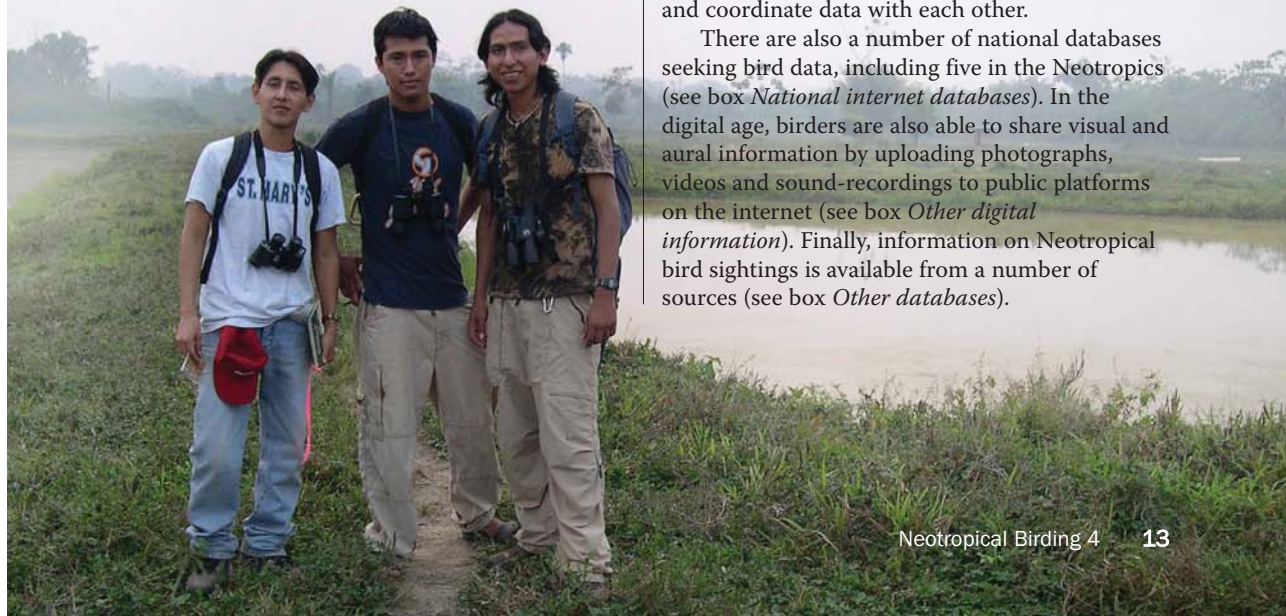
This situation is rapidly changing, and several web-based tools now allow us to share our bird records in a more powerful way than ever before. Moreover, these tools are helping to unite local birding communities and to link these groups with conservation and research efforts. In this article, I aim to give an overview of these tools and the use to which they are put, seeking to encourage *Neotropical Birding* readers to participate in this ornithological dimension of the internet revolution.

A plethora of databases for a wealth of data

There are now many web-based bird databases available for public use, both in terms of contributing data and imbibing information. These fall into several categories.

The two major members of the worldwide database ‘family’ that seek observational information are eBird and WorldBirds. Both have regional and national portals (see respective boxes). The Cornell Laboratory of Ornithology and National Audubon Society (now simply Audubon; BirdLife in the US) launched eBird in the US and Canada in 2002, but it soon migrated south. Now covering the entire New World, eBird is available in three languages (English, Spanish, and French)¹. WorldBirds is managed by BirdLife International, the Royal Society for the Protection of Birds (RSPB, BirdLife in the UK) and (again) Audubon. WorldBirds is developed as a global network of databases, with each country (through its BirdLife Partner or similar organisation) having its own system linked to the main site. eBird and WorldBirds are currently discussing how to share and coordinate data with each other.

There are also a number of national databases seeking bird data, including five in the Neotropics (see box *National internet databases*). In the digital age, birders are also able to share visual and aural information by uploading photographs, videos and sound-recordings to public platforms on the internet (see box *Other digital information*). Finally, information on Neotropical bird sightings is available from a number of sources (see box *Other databases*).



GLOBAL INTERNET DATABASES

eBird

eBird (<http://ebird.org>) is the grandfather of bird observation databases and contains a variety of portals to area- or issue-specific databases. Portals include:

Puerto Rico <http://ebird.org/content/pr/>;

Hispaniola <http://ebird.org/content/hispaniola/>;

U.S. Virgin Islands: <http://ebird.org/content/usvi/>;

Society for the Conservation and Study of Caribbean Birds: www.scsccb.org/eBirdpage.htm;

Mexico: <http://ebird.org/content/averaves/>;

Guatemala: <http://ebird.org/content/guatemala/>;

South America: <http://ebird.org/content/ebird/news/south-america-ebird-beta-testing/>;

Priority Migrant: <http://ebird.org/content/primig/>;

and Painted Bunting: http://ebird.org/content/ebird/news/we-need-your-painted-bunting-observations?set_language=es.

Additional eBird portals for Bolivia, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador and Panama exist or are under construction. In the coming years, eBird will have global coverage.

WorldBirds

WorldBirds (www.worldbirds.org) provides a network of databases managed by individual BirdLife International Partners. WorldBirds, as its name suggests, covers the whole world, so Neotropical birders should follow the links to the Central America and Caribbean entry point (www.worldbirds.org/mapportal/worldmap.php?m=4) or South America page (www.worldbirds.org/mapportal/worldmap.php?m=5).

From here, users can access the individual databases for countries such as: Anguilla, Antigua and Barbuda, Argentina, Aruba, Bahamas, Barbados, Bermuda, Bonaire, Cayman Islands, Cuba, Curaçao, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Montserrat, Panama, Paraguay, Puerto Rico, Saba, St. Kitts and Nevis, St. Lucia, St. Eustatius, St. Maarten, St. Martin and St. Barthelemy, St. Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos Islands, Virgin Islands (to UK), and Virgin Islands (to US). Ecuador, Uruguay and probably Bolivia are coming soon.

Case study: eBird

The most sophisticated example of the new web-based tools is eBird, upon which this article will focus. Other databases also benefit conservation and science, so the remainder of this article is intended as a case study rather than a recommendation to favour eBird over the alternatives. Indeed, readers are invited to test out the various databases for themselves.

Improving knowledge

eBird documents the presence, absence and abundance of birds using checklists submitted by participants. Birders can enter their observations into eBird's main webpage or through a variety of 'portal' webpages focused on individual countries (e.g. Mexico) or particular bird groups (e.g. 'priority migrants'). Data can be entered online or be uploaded in an MS Excel spreadsheet. The user may now also extract their data in the latter format. Submitted data are vetted by automatic filters that flag unusual sightings or high numbers and send these records to regional experts for review, in order to ensure quality and guard against erroneous entries. eBird data are shared with the Avian Knowledge Network (AKN) and Global Biodiversity Information Facility so that the information is broadly accessible to researchers and conservationists. WorldBirds is also moving towards sharing its data with the AKN.

User perks

eBird is designed for public participation, encouraging birders to submit their observations and to use the various facilities offered by its database. eBird users can store personal lists or query the database to produce interactive maps, graphs and other outputs. Birders can also use eBird to compare their first-arrival records or high counts of a particular species with those of the wider birding community. Some features are currently only available for North American birds but will soon be extended to those in the Neotropics.

Contributing information

There are several ways (called 'protocols' in eBird-speak) for a user to enter data into eBird. The simplest way is under the 'casual protocol', which requires merely a single species, date, and location. However, entering more information improves the quality of subsequent scientific analysis. Accordingly, if possible, enter all the bird species seen rather than a selection. If you

counted the number of individuals of some or all species, enter this as well. A few more keystrokes can render your checklist even more valuable: enter a few measures of how much effort you spent watching birds. These include the start time and duration of your birding, and whether you were counting birds from a single spot ('stationary protocol'), within a specified area ('area protocol'), or while on the move ('traveling protocol'). The area and travel protocols require the participant to enter the area or distance searched, but internet-based tools can help the participant provide these figures. (For distance, see www.runningmap.com and www.gmap-pedometer.com; for area, visit www.acme.com/planimeter.)

Why do scientists need your sightings?

Comprehensive checklists with counts for all species, accompanied by effort information, are valuable to ornithologists and conservationists because the combined data provide bird surveys that are comparable across time and between sites. At present there is no population monitoring for the large majority of Neotropical resident species and for many North American breeders within their non-breeding Neotropical ranges. eBird, WorldBirds and other databases accumulate thousands upon thousands of observations from birders like you and me, and have the potential to allow scientists to better understand the distribution, population trends and abundance of poorly known birds, as well as to track changes in ranges—all essential information for effective bird conservation.

Strengthening birding communities

The database systems offer other benefits. A suitable illustration comes from outside the Neotropics. Kuşbank, the WorldBirds installation in Turkey, has provided a focal point around which a new birding community developed. Individual birdwatchers discovered that others shared their hobby, and that Kuşbank provided a way for them to communicate their sightings. Over time, small local groups formed that arranged trips to areas devoid of ornithological information in order to fill in gaps in knowledge, and participated in structured surveys. The sense of 'belonging' thereby created is important in itself, but has also produced a pool of potential new professional ornithologists. Interestingly, half of the Kuşbank participants are women and many are young adults—in a hobby that has traditionally been favoured by older men. Similar benefits are likely in the Neotropics.

NATIONAL INTERNET DATABASES

Upload your sightings in Venezuela to www.avesvenezuela.net. In Peru, www.birding-peru.com is an interesting forum on which to share sightings, lists and photographs. Its 'expedition birding' discussion seeks to rank the importance of bird observations by the rarity of knowledge for the species concerned. In Colombia, www.proaves.org has a portal for entering observations of banded (ringed) birds. In Belize, contribute data on birds and other wildlife to BERDS (www.biodiversity.bz/) and do the same for birds in Suriname at <http://webserv.nhl.nl/~ribot/php4/verspreiding.htm>.

OTHER DIGITAL INFORMATION

You can upload sound-recordings to xeno-canto (www.xeno-canto.org), which shares its distributional records with NatureServe (www.natureserve.org) and is working on sharing them with eBird. For more information on xeno-canto see the article in *Neotropical Birding* 3: 17–23. Photographs can be uploaded to the Neotropical Bird Club's Neotropical Bird Images database (www.neotropicalbirdimages.org), to galleries on Surfbirds (www.surfbirds.com) or to the flickr group on Neotropical birds (www.flickr.com/groups/neobirds/). In addition to photographs, videos can be uploaded to the Internet Bird Collection, run by the team that produces *Handbook of the birds of the world* (<http://ibc.hbw.com/ibc>); well over half the world's birds are already represented. One can also search the Macaulay Library archives of sound and video files (<http://animalbehaviorarchive.org/loginPublic.do>) though this portal does not accept contributions online.

OTHER DATABASES

Observado.org (<http://observatio.eu/index.php>) is a Netherlands-based site soliciting observations of birds and other organisms from anywhere in the world. Bird observation data are accessible on several websites, even if the average birder does not contribute to these databases. Counts of migrating raptors from Veracruz, Mexico, are available at www.hawkwatch.org. The Global Avian Influenza Network for Surveillance website (www.gains.org) enables visitors to search its databases of bird observations in the Neotropics and elsewhere. Sightings are also often posted on e-mail list-servers related to Neotropical birds. Non-subscribers can view posts from forums such as Mexico Birding, NEOORN, Neotropical Birding (a forum not related to this magazine) and BirdingPeru at Birdingonthe.net (www.birdingonthe.net/birdmail.html).



On the Pacific coast of Costa Rica, researchers are collating records for eBird of globally threatened birds such as (clockwise from top left) Mangrove Hummingbird *Amazilia boucardi* (Daniel Lebbin), Turquoise Cotinga *Cotinga ridwayi* (Pete Morris/Birdquest) and Black-cheeked Ant Tanager *Habia atrimaxillaris* (Daniel Lebbin)



When visiting stunning places in the Neotropics such as Bosque del Río Tigre Lodge in Costa Rica (left), take only photographs and leave only footprints—plus a record of your observations in an online database, as Liz Jones and Abraham Gallo are doing (right, inset) with eBird (both Daniel Lebbin)



Many Neartic migrants spend more time in the Neotropics than on their North American breeding grounds, but much less is known about their non-breeding distributions. Your observations can help researchers better understand where and when species such as (clockwise from left) Olive-sided Flycatcher *Contopus cooperi* (Daniel Lebbin), Cerulean Warbler *Dendroica cerulea* (Joseph Tobias/www.neomorphus.com) and Canada Warbler *Wilsonia canadensis* (Kit Day/www.kitday-uk.com) occur in the Neotropics

eBird projects are under development to help conserve the West Indian Whistling Duck *Dendrocygna arborea* (Malcolm Saunders; www.whistlingduck.org) across its Caribbean range



Conservation

I am personally involved with a project to monitor globally threatened birds near the Osa Peninsula of Costa Rica, using eBird to store observational data. With funding from the American Bird Conservancy and Friends of the Osa, I trained local birding guides to record their observations using eBird protocols and to upload their data. Armed with eBird, we are now gaining a better understanding of the distribution and habitats used by Mangrove Hummingbird *Amazilia boucardi* (Endangered), Yellow-billed Cotinga *Carpodectes antoniae* (Endangered), Turquoise Cotinga *Cotinga ridwayi* (Vulnerable) and Black-cheeked Ant Tanager *Habia atrimaxillaris* (Endangered) in the region. If you have sightings of these species from past trips to Costa Rica, you too can upload them to eBird (and please let me know if you do!). In this way, eBird and other databases offer opportunities to 'liberate' old checklists collecting dust in notebooks on shelves, giving these data new life and utility.

Other conservation-related eBird projects are already gathering information for migratory birds that breed in North America, but winter in the Neotropics. These include Olive-sided Flycatcher *Contopus cooperi* (Near Threatened), Golden-winged Warbler *Vermivora chrysoptera* (Near Threatened), Blue-winged Warbler *Vermivora pinus*, Cerulean Warbler *Dendroica cerulea* (Vulnerable), Canada Warbler *Wilsonia canadensis* and Painted Bunting *Passerina ciris* (Near Threatened). Again, eBird managers want your observations of these species!

Moreover, eBird's conservation ambitions continue to grow. Projects to monitor threatened species in the Neotropics, such as the West Indian Whistling Duck *Dendrocygna arborea* (Vulnerable), are under development. As more people use eBird and similar databases, the more valuable these tools will become and the more they will be applied to research and conservation. If you have not yet tried any of the databases, there's never been a better time than now to do so.

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