

Where does your MT eBird data go?

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(Thick-billed Longspur)
All photos by Bo Crees

When birdwatchers and nature lovers are out hiking, driving, or watching their feeders they often submit their bird observations to eBird. Many of you are well familiar with eBird and know that it is a wonderful, fun, easy to use resource that was developed and is run by the Cornell Lab of Ornithology at Cornell University. It allows birders and scientists alike to keep track of birds on many levels: even a humble backyard feeder list is instantly added to a massive data set that allows us to study long term regional, national, and global population trends (and also where we can find cool birds!). “eBirders” around the world contribute more than 100 million bird sightings annually and eBird participation has been increasing by about 20% every year. We have many eBirders in Montana. Some are casual, submitting their observations a few times a year, and others do not dare miss a day; they are proud of daily eBird submission streaks spanning not weeks or months, but *years*. All this citizen science data is extremely valuable. Imagine you are an agency biologist required to make an informed management decision regarding a threatened bird species. Obviously it would be best to use the most up to date observations, and as many observations as possible. Hundreds of active eBirders in the state provide a continuous flow of useful observation information. Where are the birds? What habitat do they seem to prefer? When are they present? Are there more or less than last week? Last month? Last year? Do their known ranges seem to be growing or shrinking?

Are they showing up or leaving sooner or later than they used to? eBird and eBirders make it much easier to answer such questions. And, the more data we have, the more accurate, timely, and trustworthy it is.

In Montana, public agencies, the private sector, the education sector, and the general public rely on the Montana Natural Heritage Program (MTNHP) whenever there is a need for up to date information about our flora and fauna (for management or development purposes, for example). The MTNHP is Montana's primary source for reliable and objective information on our native species and habitats, emphasizing those of conservation concern. Being a dynamic depository of biological and ecological information, the MTNHP naturally needed to obtain, process, and make available to all of its partners the massive eBird dataset.

Having a partnership position with Montana Audubon and the MTNHP, I am currently tasked with processing and reviewing much of Montana's eBird data and making sure it is as accurate and reliable as possible before adding it to our existing bird database. Because the MTNHP puts emphasis on species of conservation concern, I started by reviewing all species that have a Species of Concern ("SOC") designation. These are species that are at-risk due to declining population trends, threats to their habitat, restricted distribution, and/or other factors. Examples of SOC in Montana are the Great Blue Heron, Evening Grosbeak, American White Pelican, Brewer's Sparrow, Black-necked Stilt and Harlequin Duck.



Brewer's Sparrow, Black-necked Stilt and Harlequin Duck are among our Species of Concern in Montana.

Let's look at the Evening Grosbeak and American White Pelican to help explain how large the eBird dataset really is, and how important and useful it will be to add it to the MTNHP database. We currently have 3,362 Evening Grosbeak records in our MTNHP database. The information included in each record is typically the observation location, date, number of birds, what the birds were doing (e.g. singing, nesting, foraging, staging) and a few other details reported by the observer. Each observation adds to our understanding of the species in Montana. In a few weeks we will add more than 12,200 Evening Grosbeak eBird records- reported over the last several years- to the database! Also, right now the MTNHP has 2,742 American White Pelican records from various sources, but I recently reviewed a whopping 12,095 additional eBird records of this species that will soon be added to our database! It is not hard to see the benefit of such a significant data addition to our knowledge and understanding of this species in the state.

I have also been reviewing many eBird records of uncommon, rare and accidental species such as the Red-throated Loon, Black Scoter, Sabine's Gull, Cackling Goose, Scissor-tailed Flycatcher, Gray Flycatcher, Lesser Goldfinch and Blue Grosbeak. In the case of the Cackling Goose, the MTNHP currently has only 64 records in the database, but more than 930 eBird records will soon be added to that total. That is nearly a 15-fold increase! Likewise, our total of 35 Lesser Goldfinch records will soon balloon to 482 records when the eBird data will be added to the total. Anyone requesting information from the MTNHP regarding the several species in the examples above will undoubtedly get more timely and relevant data with this enormous eBird data increase.

As I mentioned earlier, the eBird data requires some reviewing and processing before it is added to the MTNHP database. While eBird does a good job flagging and investigating unusual and/or improbable observations, I also take a quick look at most records prior to approving them to make sure the reported location, habitat and observation date, among other things, are plausible for the species.



Gray Flycatcher: as soon as the eBird review is finalized we will triple the number of records for this species in the MTNHP database.

Many rare birds and practically all accidental birds are observed in unexpected locations (otherwise they wouldn't be accidental), so I must make sure the observer provided convincing documentation in support of their observation. Another important part of the review process that can take a significant amount of time is the merging of records when multiple eBird observers report the same individual bird. This usually happens when many birders chase and re-find a previously reported rare bird that stays around a known location for some time. For an easy example, there are at least 16 eBird records of the Ivory Gull that showed up on Flathead Lake last winter. Since each record represents the same individual gull, they must be merged into a single record before they are added to the MTNHP database. This happens frequently, and some sleuthing is often required to figure out whether different observers are reporting the same individual bird. Experienced eBirders often comment "Continuing" when reporting a known bird, which helps a lot.

This review process is not particularly complicated but due to the massive size of the eBird dataset (more than 200,000 records of Species of Concern and rare birds!) it takes a long time. In the coming weeks we will finalize the review of the Species of Concern and rare bird records submitted to eBird and add these records to the MTNHP database. Thanks to the many dedicated citizen scientists that regularly report their observations on eBird, the MTNHP will continue to get large amounts of up-to-date bird data from throughout the state. This data will continuously increase our understanding of bird communities and population trends in the state and will result in better-informed management actions that will undoubtedly benefit our feathered friends.



We will soon add nearly 400 eBird Red-headed Woodpecker records to the 845 MTNHP records. This is yet another Species of Concern in Montana.