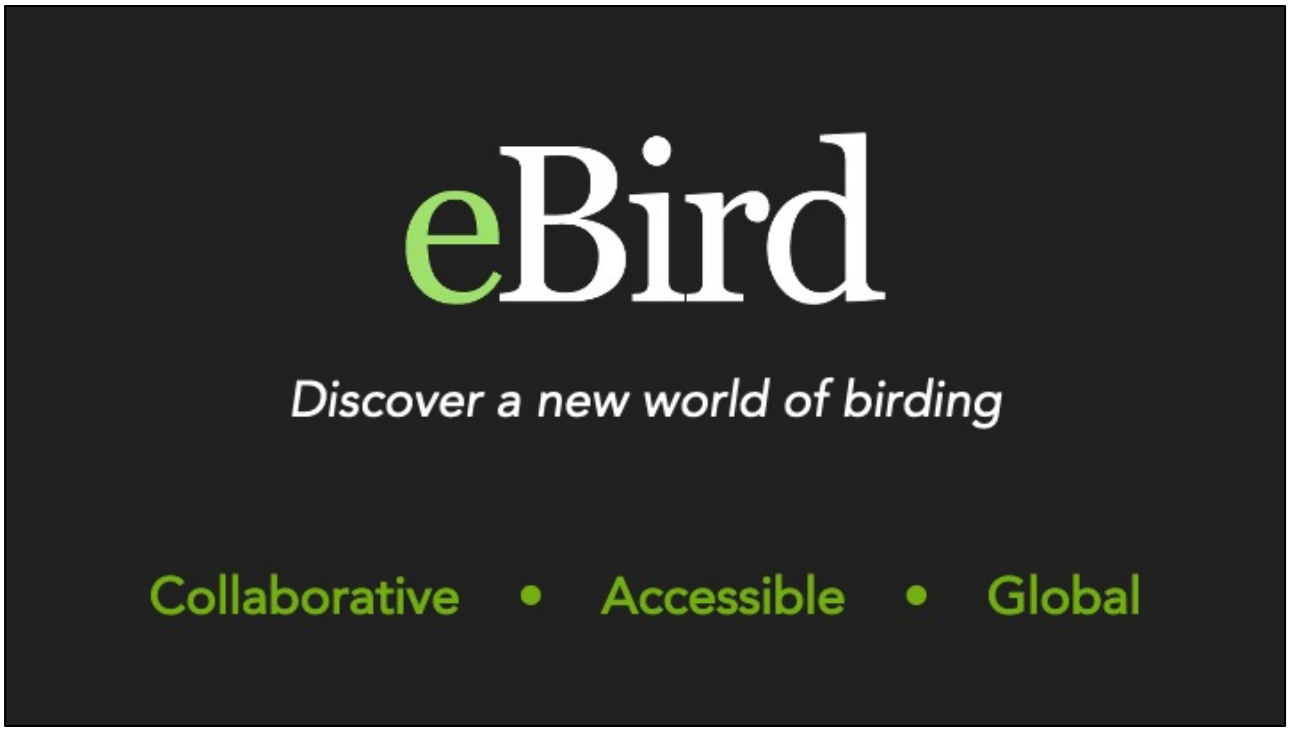
Version: 1.0 last updated 22 June 2021

People love birds! And what's not to love? They're colorful, charismatic, and can be found in almost every habitat in the world. Wouldn't it be great if we could harness the energy and enthusiasm of birders and use it to help better understand and protect birds?

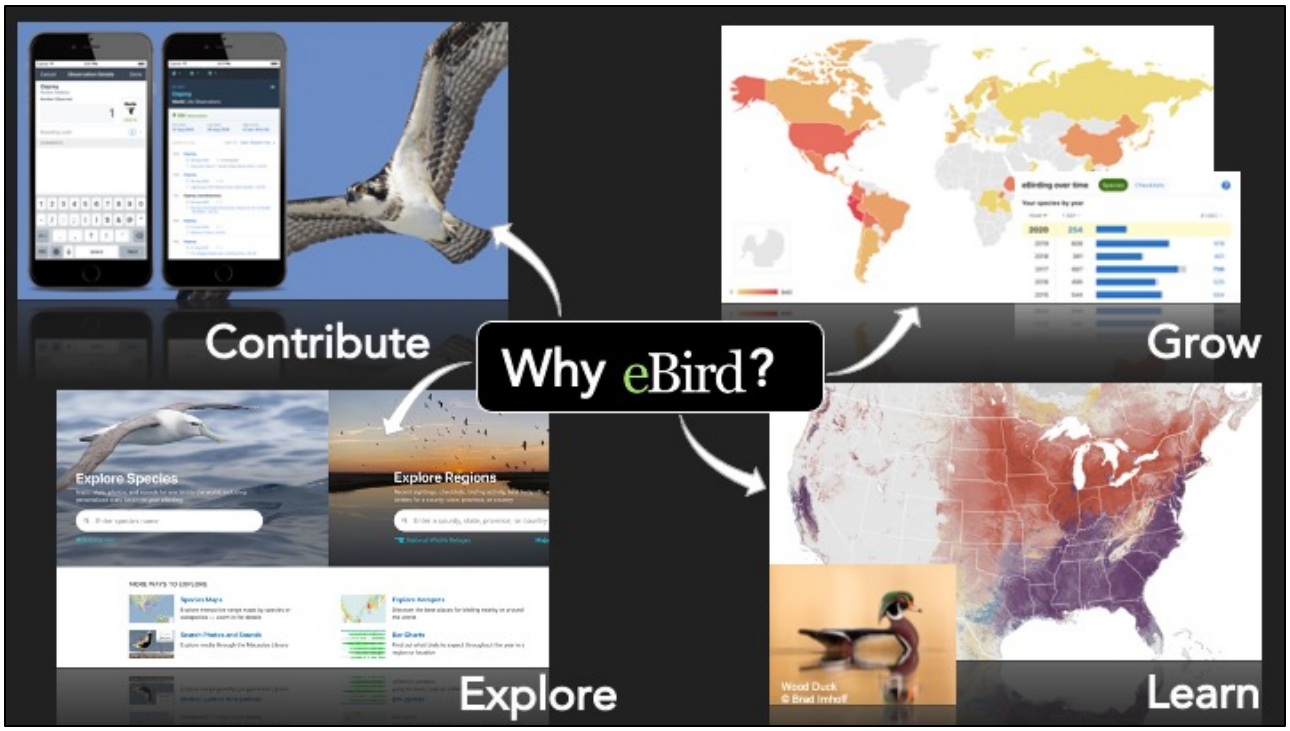
Photos © Ian Davies / Macaulay Library



That's where eBird comes in. **What is eBird?** eBird is among the world's largest biodiversity-related science projects. eBird allows people to share their bird observations online where they can be used for bird research and conservation.

eBird is...

- Collaborative: eBird is managed by the Cornell Lab of Ornithology in partnership with hundreds of organizations, thousands of regional experts, and hundreds of thousands of users around the world.
- Accessible: eBird features and observations are made freely available for non-commercial research and education. Data are collected within a simple, scientific framework and stored on secure facilities.
- Global: eBird is available worldwide - even on your smartphone! Dedicated volunteers and partner organizations around the world engage with local communities and ensure data quality with expert-informed filters and review.



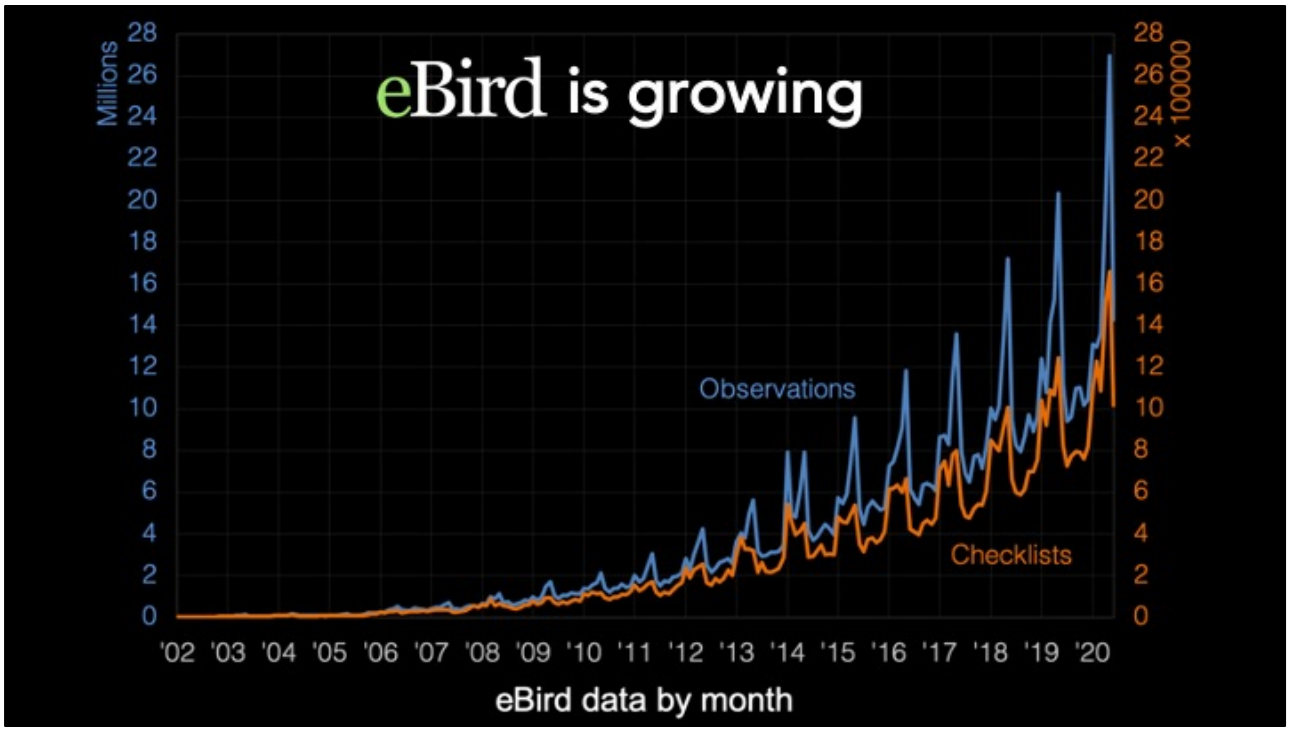
What can you do with eBird?

- Find more birds—explore hotspots and bird observations submitted by others
- Share your sightings—collect and archive your bird observations online
- Track your birding activity over time
- Contribute to science and conservation

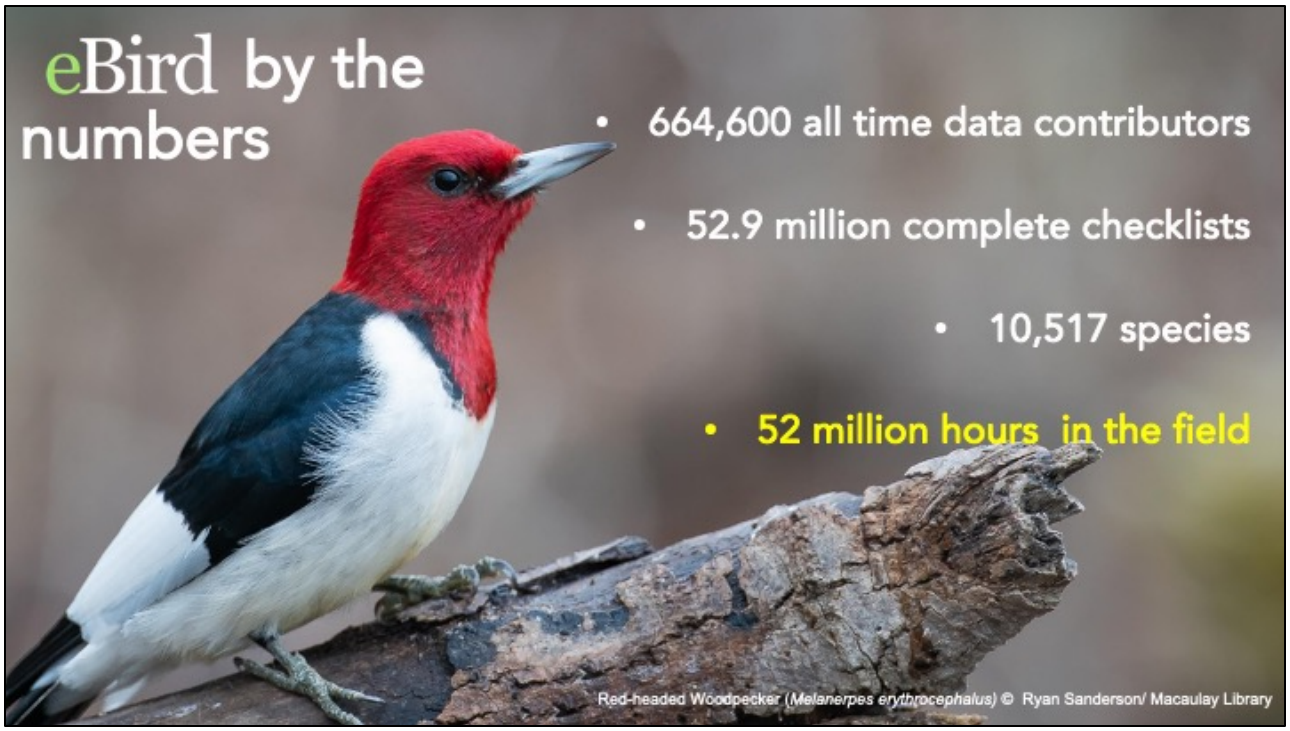
For more information about eBird, visit: https://ebird.org/about

This isn’t a photo of the world at night - it’s a map of eBird observations! Every yellow dot on this map is the location of an eBird checklist. As you can see, there are eBird checklists from every continent and ocean (dots across the water mark major shipping lanes and cruise ship routes)

The more data we have from a region, the more brightly it is colored.



This chart shows the number of eBird checklists (orange) and observations (blue) submitted each month since 2002. eBird submissions are growing by an average of 20% over the previous year. More and more people are joining eBird—that means more data for science, and more information for other birders!

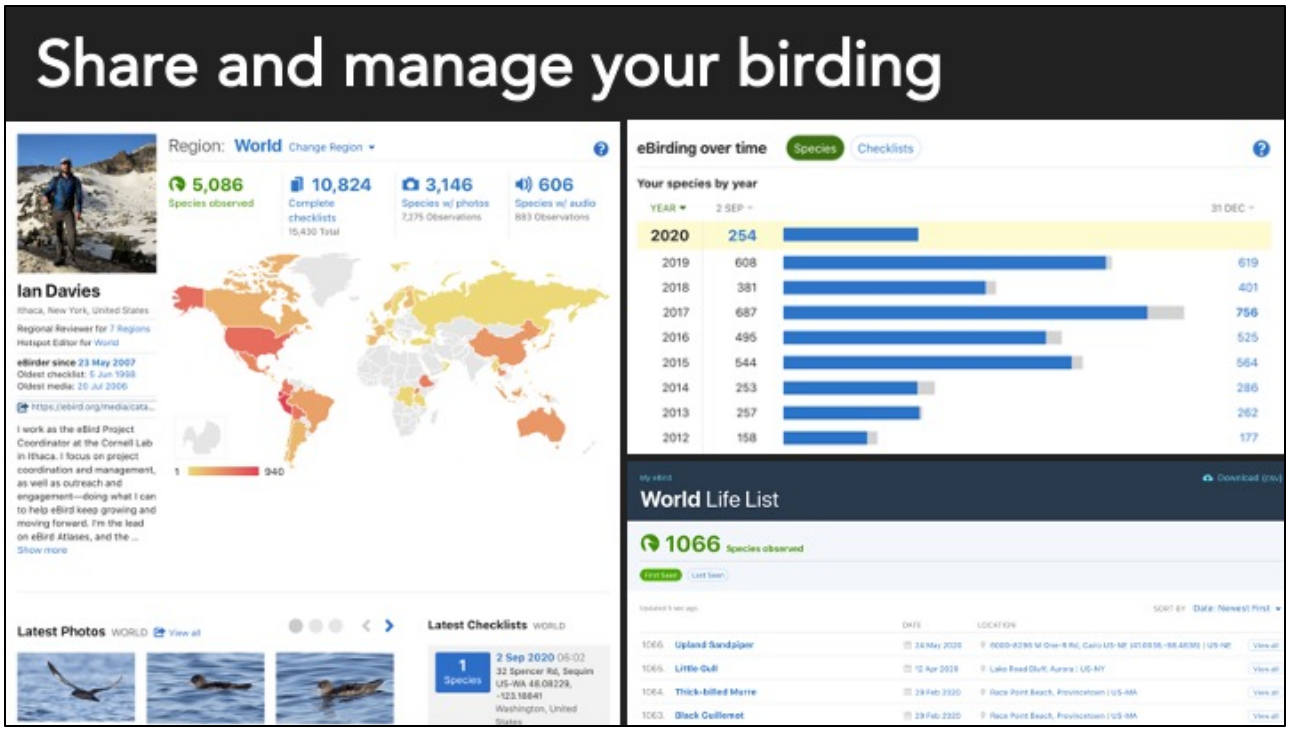


(*Presentation note: the first three metrics on this slide can be updated to the most recent stats for your region at https://ebird.org/region/world?yr=all*)

Here are some metrics of eBird participation as of January, 2021. eBird has over 50 million complete birding checklists from 620,000 eBirders. The eBird database contains reports of 10,517 bird species. As of 2020, global eBird participation represented over 52 million hours of birding in the field— that's more than 5,900 YEARS of birding!

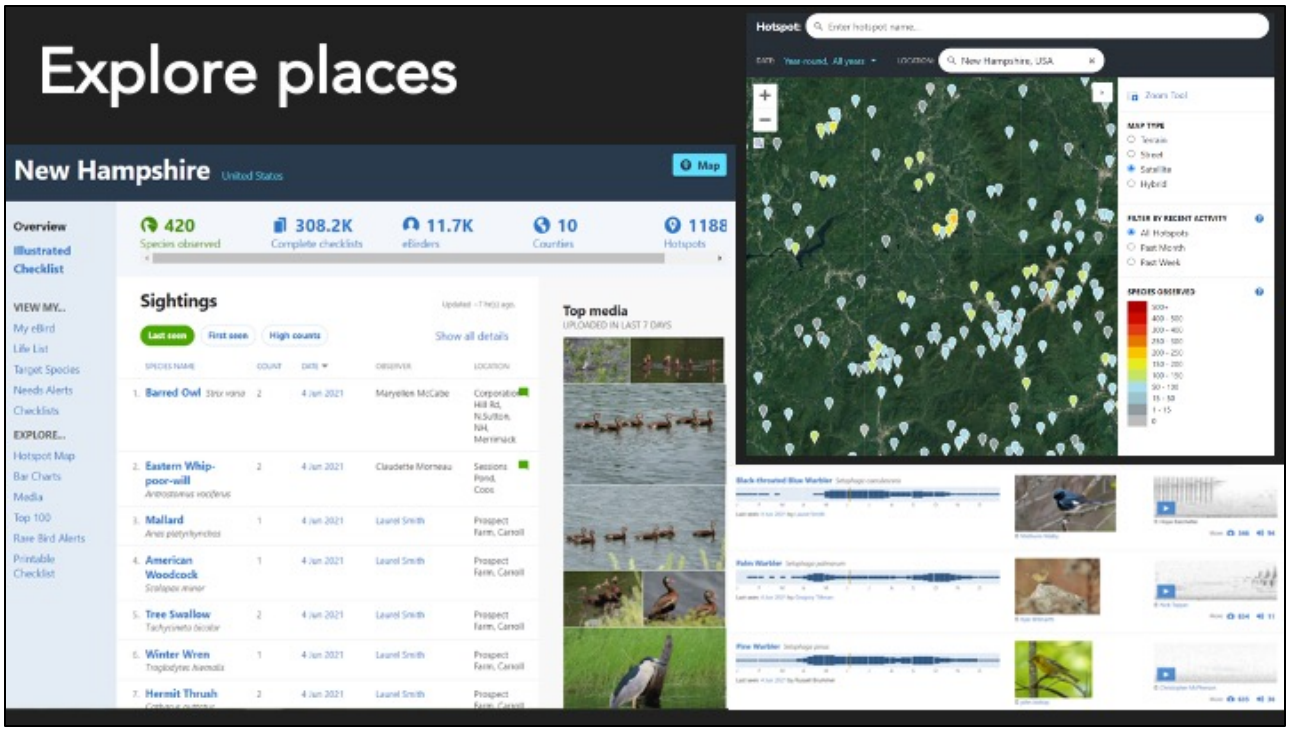
This shows the global birding community can accomplish amazing things when we work together. Our collective efforts create a unique and incredible valuable resource for science, conservation, and birding.

You can find up-to-date numbers of species, checklists, and users on eBird's homepage: https://www.ebird.org



eBird offers a variety of useful features for birders. Enter and share your birding lists, field notes, and media online. Use My eBird to track and manage your checklists. You can compare your birding activity to previous years, view a complete list of your sightings for a specific place or date, and even create a public profile to share your activity with others.

My eBird: https://ebird.org/myebird
Life lists: https://ebird.org/MyEBird?cmd=lifeList&time=life&listType=world
Profile: https://ebird.org/profile/

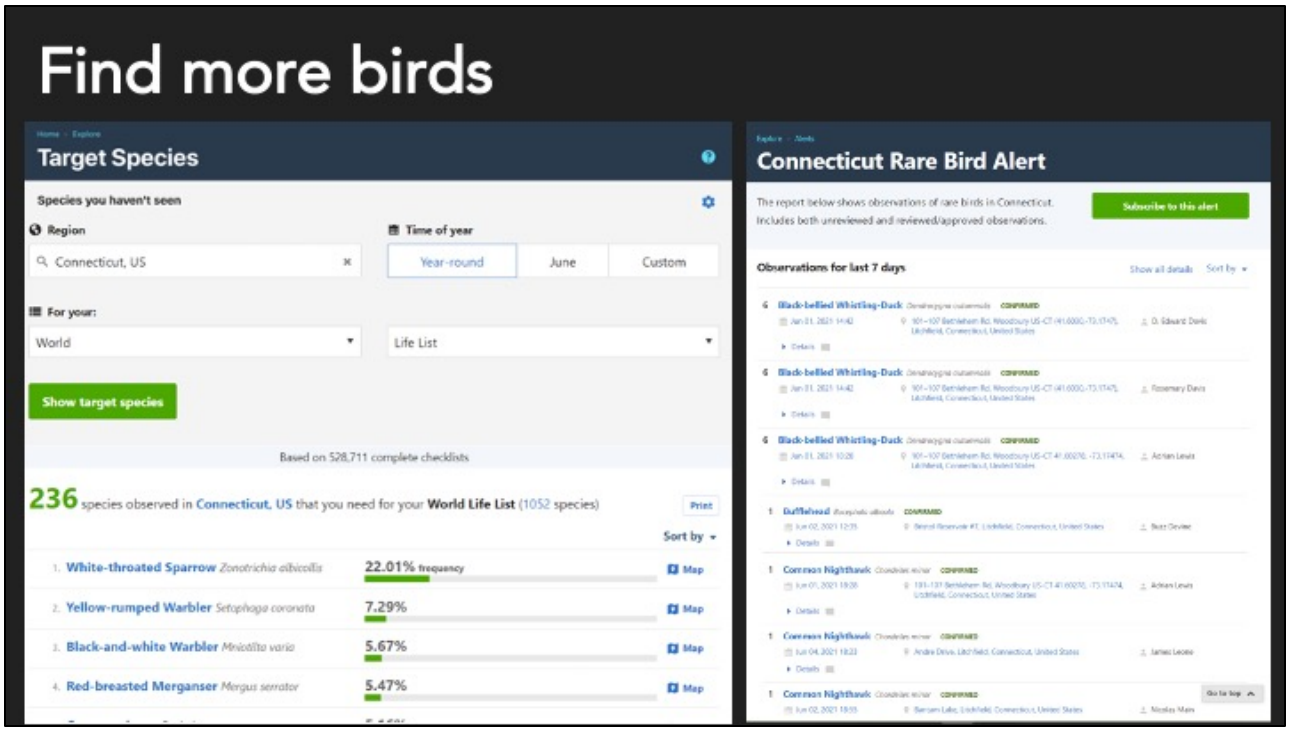


eBird also lets you explore public bird observations around the world through **regional summary pages** with species lists, recent visits, illustrated checklists of sounds and photos, and more. These pages are a great way to see who has been birding and what has been reported in an area. Discover new places to go birding with our interactive map of **eBird Hotspots** - popular birding locations recommended by other birders.

To see more, visit https://ebird.org/explore

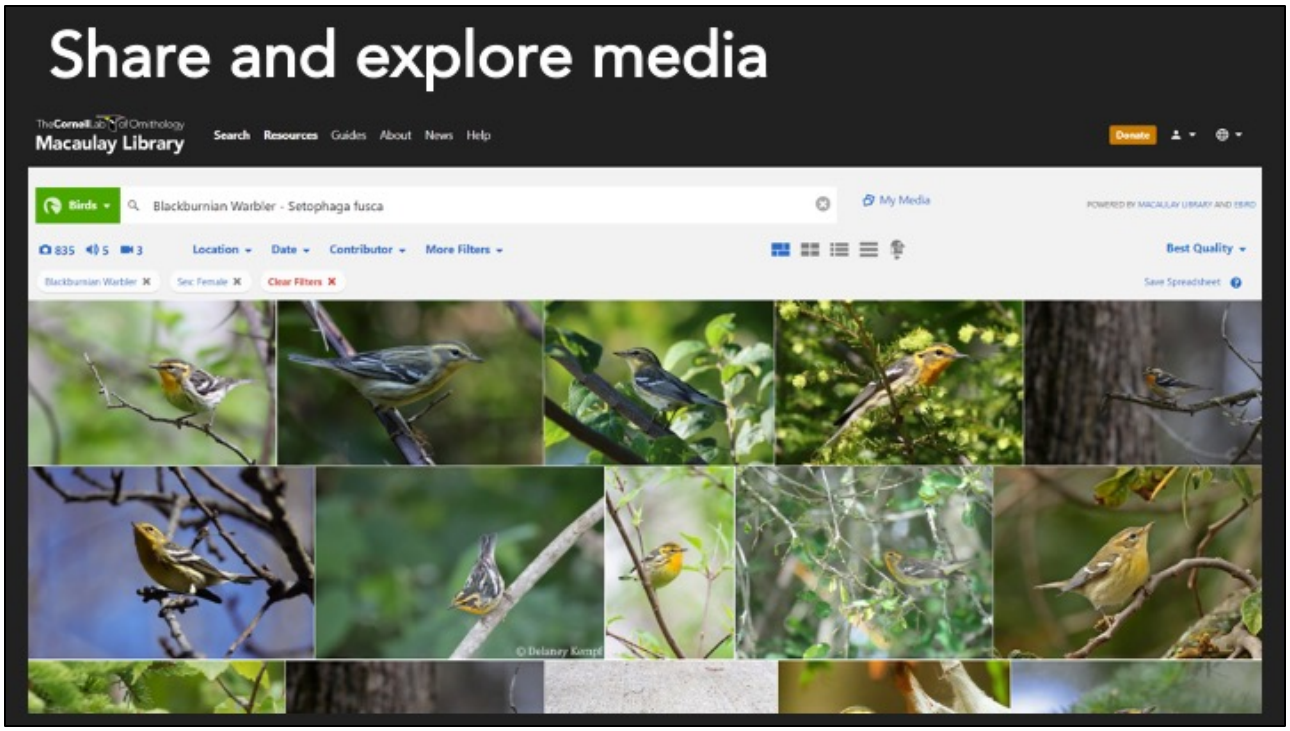
Learn more about your favorite species and where to find them with eBird species pages and range maps. eBird species pages include photos and audio recordings uploaded by other eBirders. Expand and zoom in on the range map to see everywhere a species has been reported.

To see more, visit https://ebird.org/explore



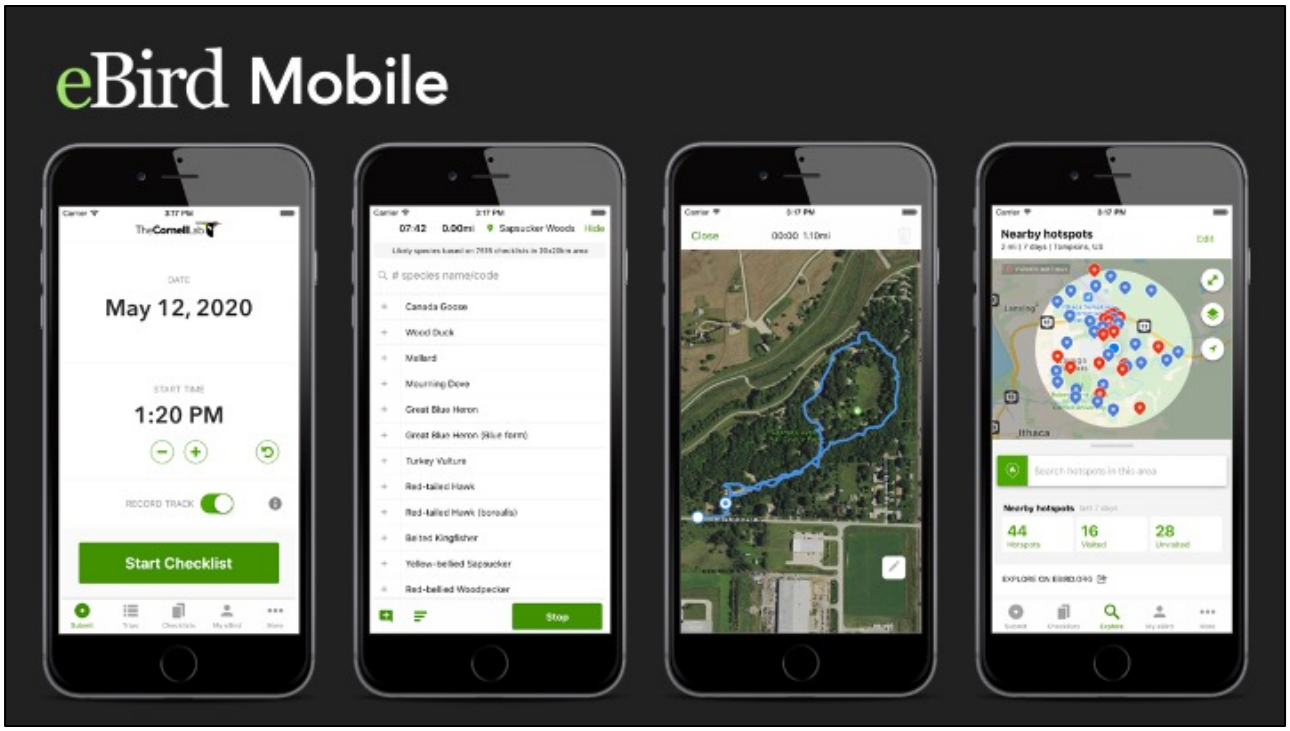
eBird has useful tools to help you take your birding to the next level. Target Species are custom lists of species you haven't reported yet. You can sign up to get email Alerts when target birds or unusual rarities are reported nearby.

Target species: https://ebird.org/targets
Alerts: https://ebird.org/alerts



Upload photos and sound recordings to your checklists to safely and permanently archive them in the Macaulay Library Wildlife Archive. Explore this amazing repository of bird images and sounds!

Visit the Macaulay Library: https://www.macaulaylibrary.org/

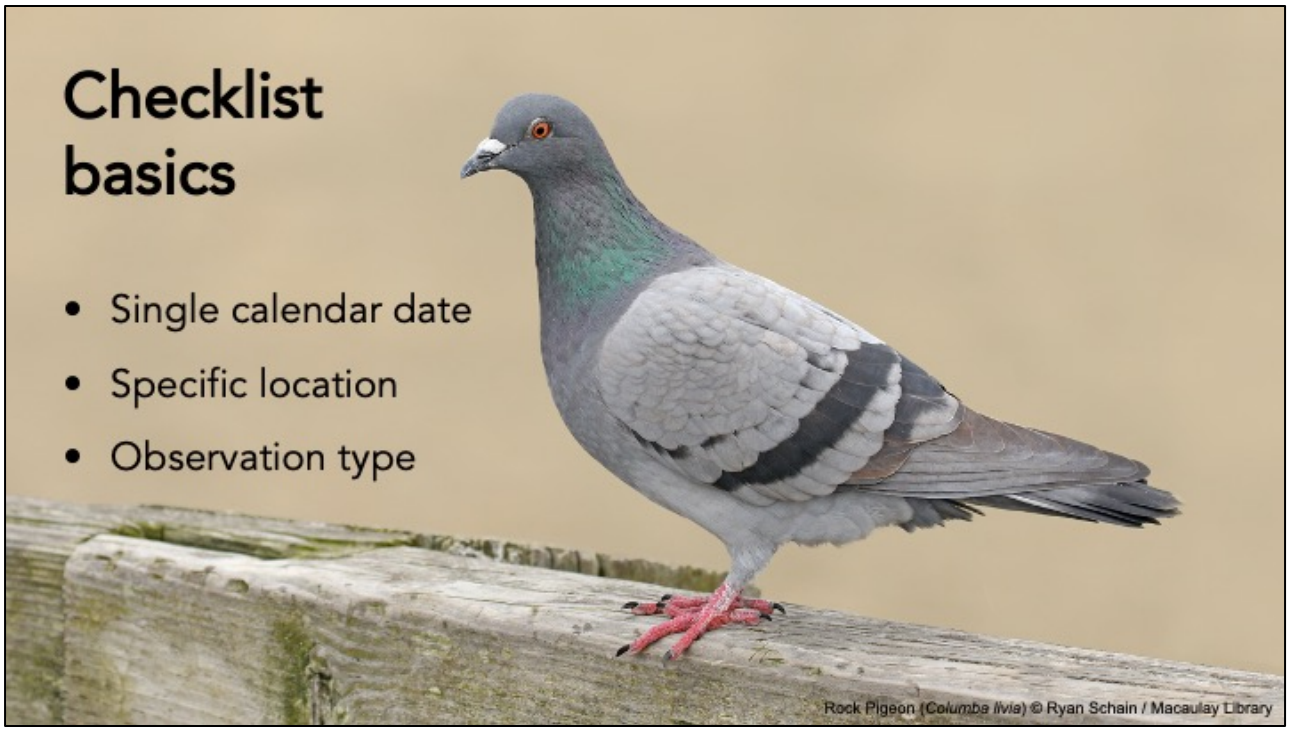


eBird has a free app that allows you to keep checklists on your phone - even without wifi. Quick entry codes and pre-loaded regional lists of likely species make using eBird Mobile easy and convenient. eBird Mobile also features GPS location services and tracking so you can focus on the birds instead of where you birded!

Use the Explore option to discover nearby Hotspots, including species lists and recent visits, and get navigation directions on your smartphone.

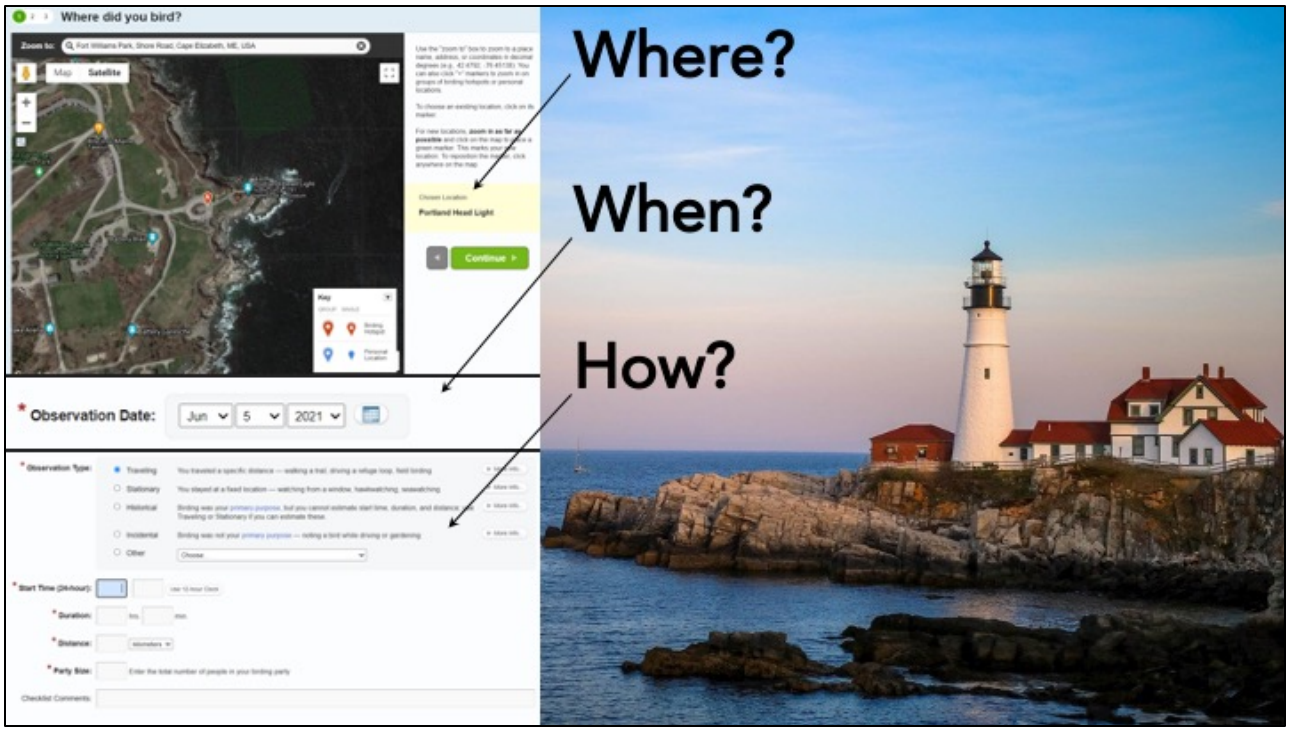
eBird Mobile for Android:
https://play.google.com/store/apps/details?id=edu.cornell.birds.ebird&hl=en_US
eBird Mobile for iOS: https://apps.apple.com/us/app/ebird/id988799279

Best of all, eBird is completely and totally FREE to use!



The goal of eBird is gather the unique knowledge and experience of birders and share it for science, conservation and education. In order to make checklists as useful as possible for these purposes, eBird checklist should adhere to the following rules. Every eBird checklist must:

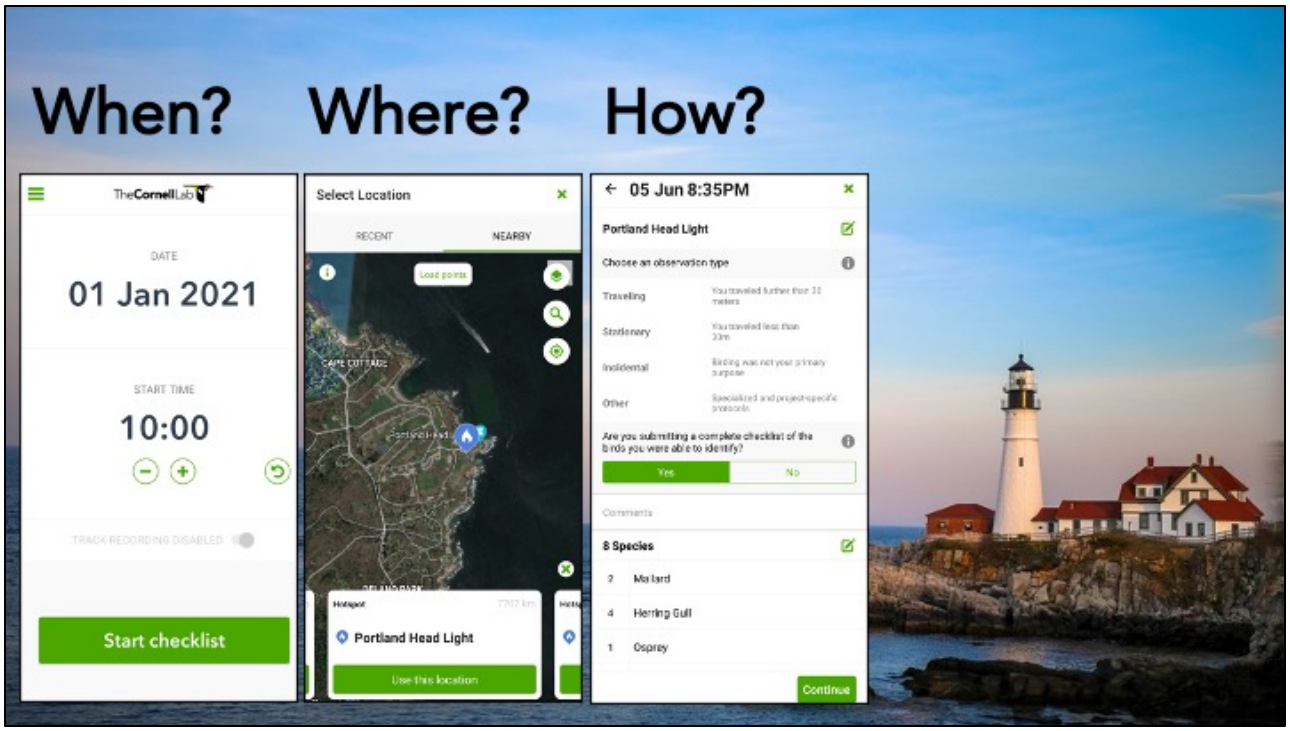
- Correspond to a **single calendar date** (checklists should not span multiple days)
- Correspond to a **specific location** (birds from different map regions should not be combined on one list)
- Have an **observation type** - or "protocol" - that best describes your birding activity



(Web version) Submitting bird observations to eBird is easy! Whether you're entering observations on the eBird website or eBird Mobile, just provide these basic pieces of information:

- **Where did you go birding?** Select your location from a map, use GPS coordinates, or select an existing location
- **When did you go birding?** Start with a calendar date. A specific start time and duration are very helpful, and may be required!
- **How did you go birding?** eBird also collects information about birding *effort*: things that can affect the number of birds you observed, such as the number of people birding and the distance you traveled while birding.* These details help eBird to understand how well the birds you report on your checklist reflect the actual number of birds in an area.

* Not all observation types (or "protocols") require the same details. The "Incidental" protocol only requires a location and date. Use the "Incidental" protocol when reporting birds from times you weren't actively birding - such as when you were driving a car or swimming at the beach.



(Mobile version) Submitting bird observations to eBird is easy! When you're entering bird lists with eBird Mobile, provide these basic pieces of information:

- **When did you go birding?** Start with a calendar date and time.
- **Where did you go birding?** Select your location from a map, use GPS coordinates, or select an existing location
- **How did you go birding?** eBird also collects information about birding *effort*: things that can affect the number of birds you observed, such as the number of people birding and the distance you traveled while birding.* These details help eBird to understand how well the birds you report on your checklist reflect the actual number of birds in an area.

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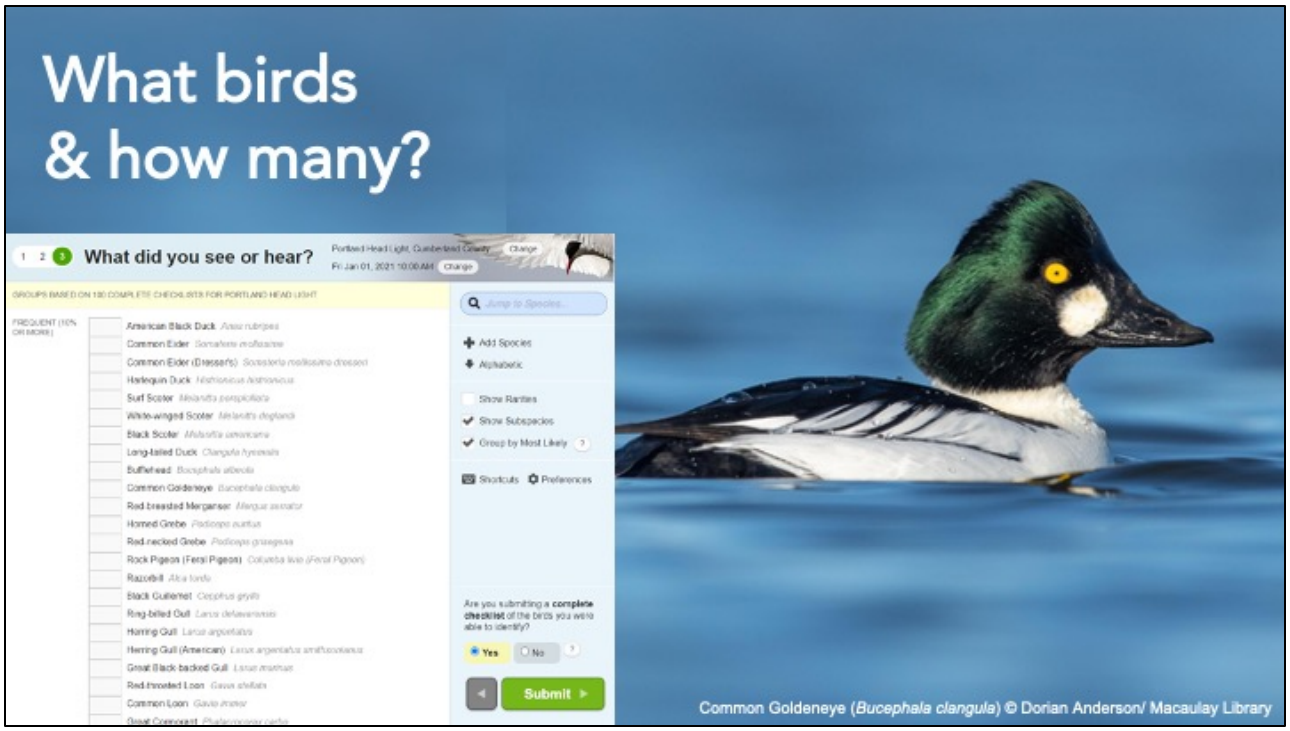
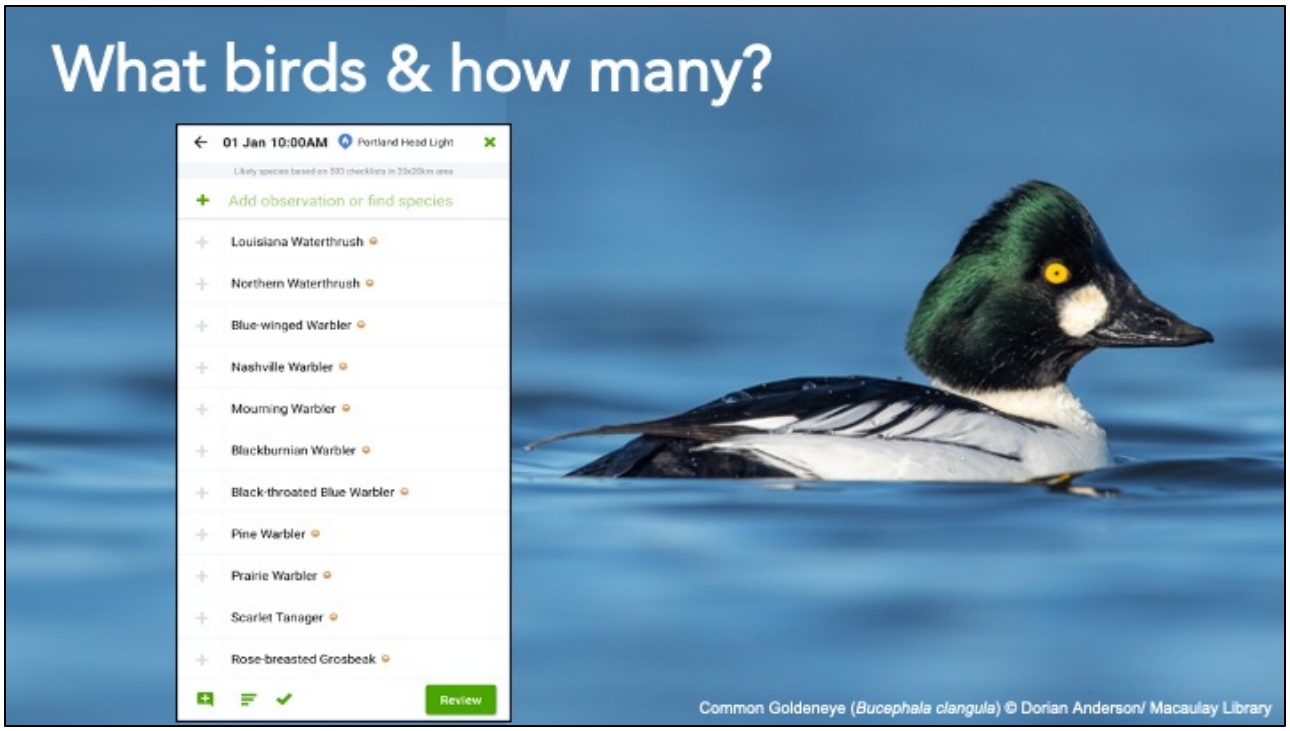
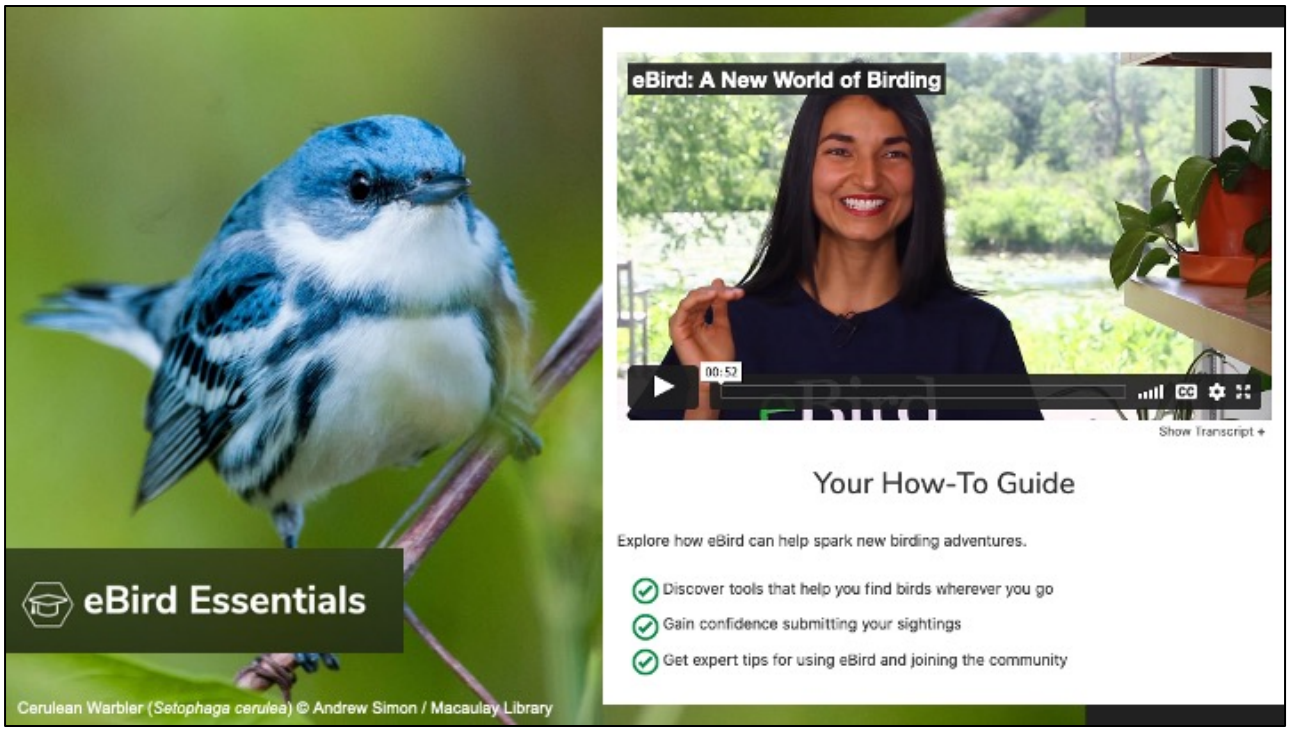


(Web version) **What birds did you see or hear?** You don't need to be able to find EVERY bird around you to use eBird. Nobody has perfect birding accuracy all the time! Report the species you are able to detect and identify. Even if you cannot identify every bird to species level, eBird provides options to report birds to a taxonomic family or group of similar species.



(Mobile version) **What birds did you see or hear?** You don't need to be able to find EVERY bird around you to use eBird. Nobody has perfect birding accuracy all the time! Report the species you are able to detect and identify. Even if you cannot identify every bird to species level, eBird provides options to report birds to a taxonomic family or group of similar species.



The free **eBird Essentials Course** is one of the best ways to learn how to use eBird. eBird Essentials is a self-paced course that provides step-by-step walkthroughs of eBird's basic features including submitting and exploring data plus tips and tricks to using eBird effectively. eBird Essentials will help you become an eBird expert!

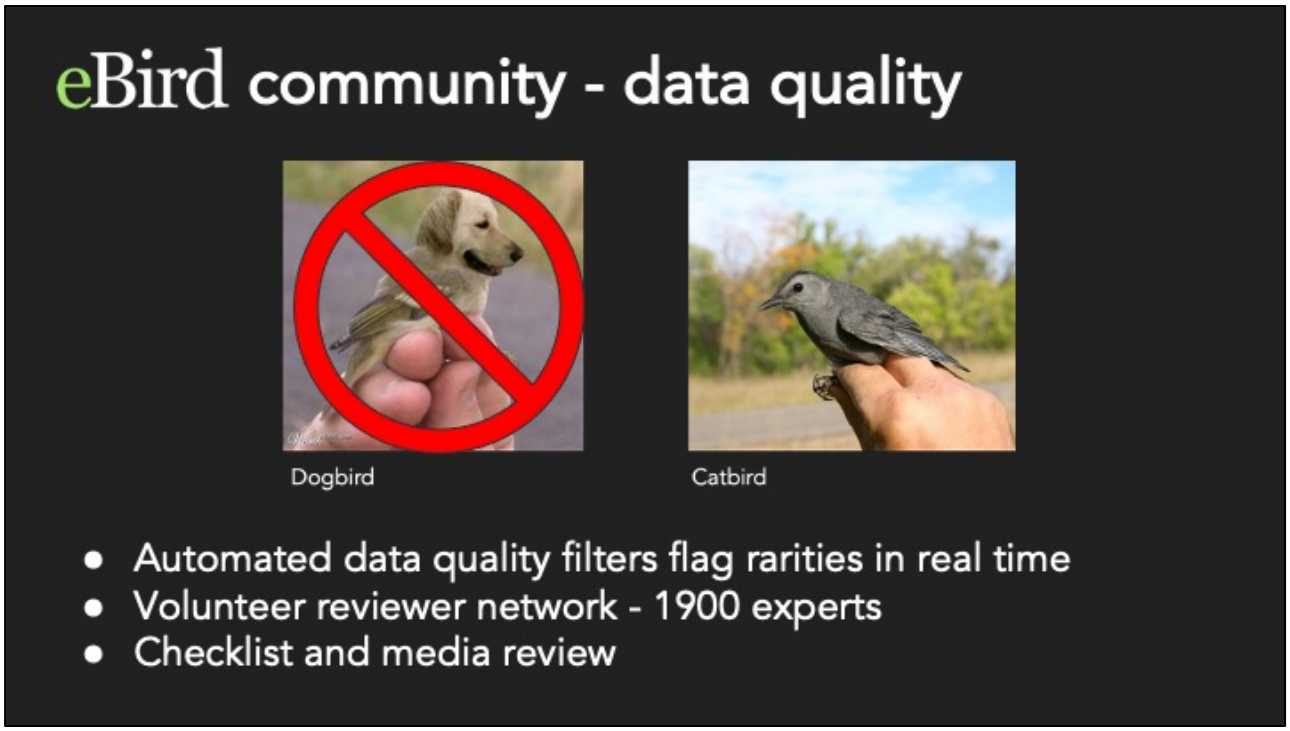
eBird Essentials: https://academy.allaboutbirds.org/product/ebird-essentials/

Want to make your eBird checklists more valuable for science and conservation? Follow eBird's rules and best practices:

- Keep **complete checklists** - report ALL the species you detect and can identify to the best of your ability.
- List the birds you see or hear. Lists that exclude heard-only birds are *incomplete checklists*.
- Make an effort to provide counts for every species you report. Estimates are OK!
- Start a new checklist every 3 hours, every 5 miles, or every time you change birding locations or habitat types.
- If you see a rare species or an unusual observation (indicated by a flag icon on your checklist) take detailed notes, photos and/or sound recordings. This documentation is necessary to help our reviewers verify the observation.

Following these tips will add scientific value to your checklists and make them useful for more research and conservation projects.
Remember: at eBird - every bird counts!

eBird Best Practices help page
:https://ebird.freshdesk.com/support/solutions/articles/48000795623



Data quality is critically important to the success of eBird. To ensure eBird's global database of bird observations remains reliable for science and conservation purposes (e.g., no reports of dogbirds allowed!)...

- Every observation is passed through **automated data quality filters** whose limits are set by local experts. Reports that exceed filter limits are flagged for further review. Flagged observations are marked with orange icons during the data entry process and additional documentation is required.
- **Media reviewers** have the ability to flag misidentified photos and sounds that may not have been flagged by the automated filters.
- A community of over 1900 **volunteer expert reviewers** evaluate all flagged records. Reviewed and confirmed observations are displayed on public eBird outputs. Unconfirmed reports are stored in eBird as personal-only observations.
- eBird's volunteer reviewers also inspect checklists for misidentified photos or audio recordings as well as misplotted locations, protocol issues, and other **checklist-level issues** that may impact data quality

Learn more about the eBird review process:
https://support.ebird.org/support/solutions/articles/48000795278

In addition to the core eBird site we have many regional portals, which are managed by local partners and provide region-specific information and birding expertise. These applications are fully integrated so when you enter records into eBird, they immediately show up in each portal (and vice versa).

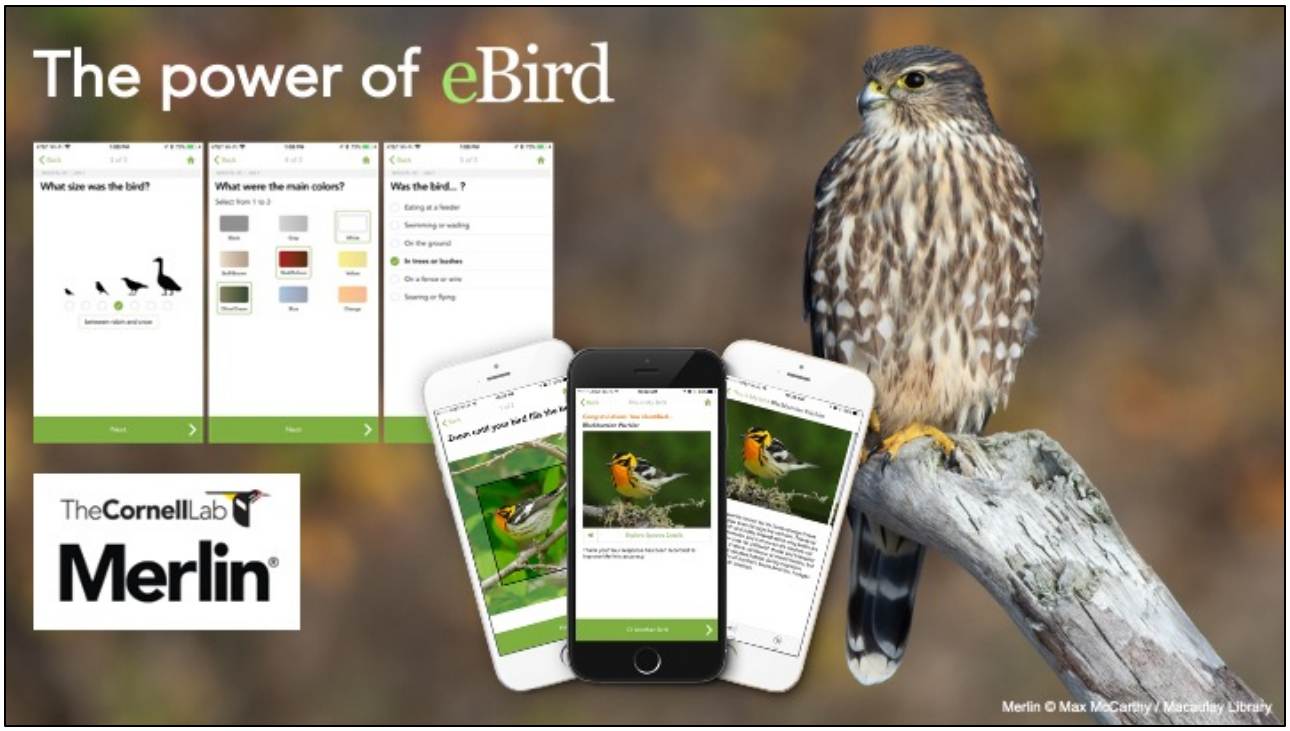
eBird's data entry portals provide a convenient way to organize statewide or nationwide breeding bird atlases. eBird offers atlases real-time data entry and outputs so participants can follow along with results throughout the breeding season and across the entire project period.

eBird portals, atlases, and other projects are made possible through collaborations with regional birding partners around the world.

eBird provides an excellent platform for broad-scale bird monitoring programs. Because it is easy and convenient to collect information for using eBird's data submission tools, the eBird database includes observations from structured surveys including the North American Breeding Bird Survey (BBS) and Christmas Bird Counts (CBC).

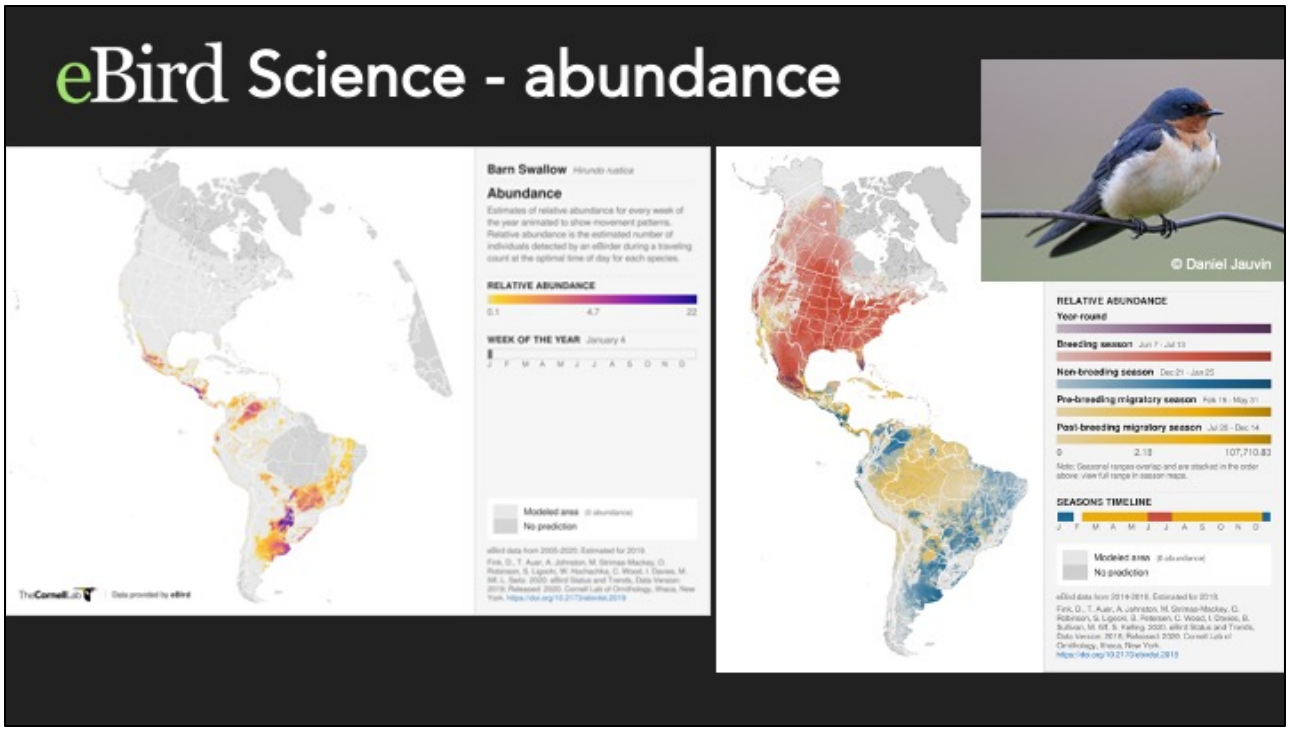
eBird also supports specialized protocols for programs such as the International Shorebird Survey, Caribbean Waterbird Census, and PRO-ALAS (Programa de América Latina para Areas Silvestres). If you have questions about how eBird can support your bird monitoring program, please reach out to us!

Photo source: BirdsCaribbean Bird Monitoring Working Group (https://www.birdscaribbean.org/)



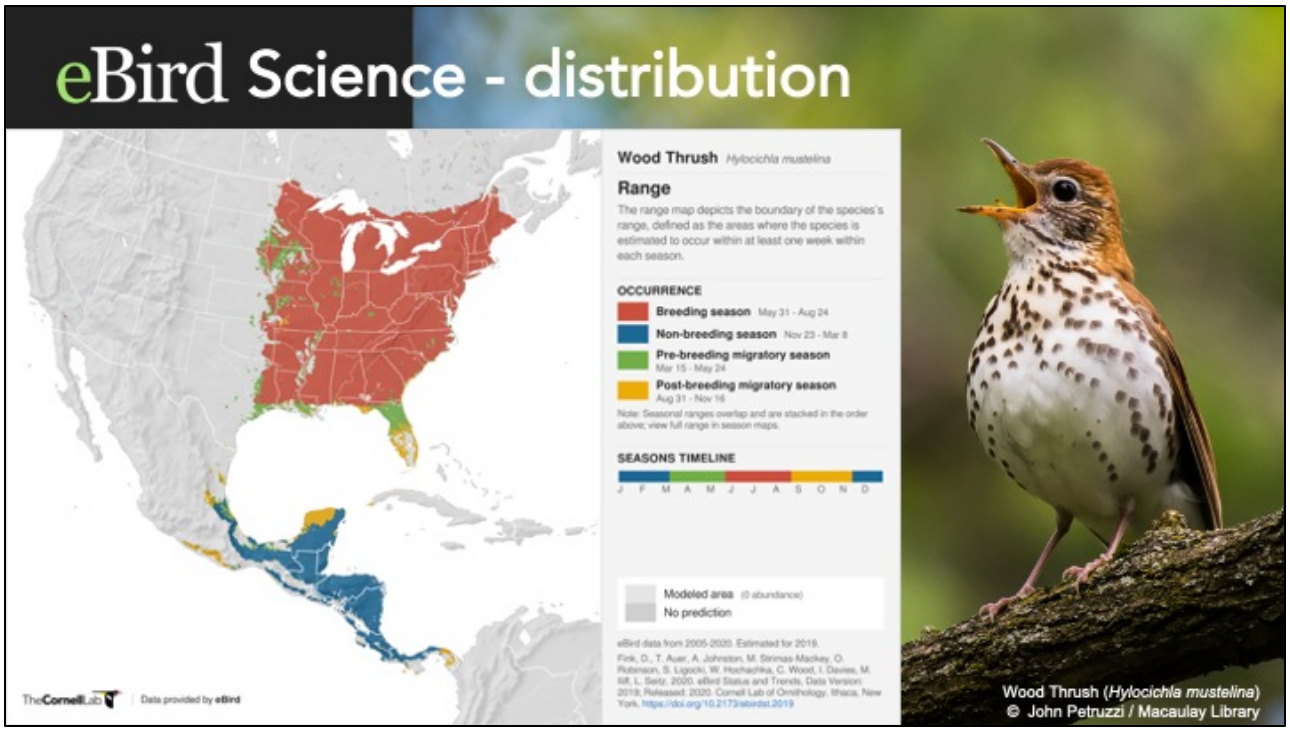
Your eBirding helps to power amazing resources for birding, science, and conservation. One example is Merlin Bird ID - a free Cornell Lab app that can help you identify over 7,500 of the world's bird species from a photograph or short description. Merlin Bird ID draws upon more than 900 million observations from eBird to determine which species you are most likely to see at your location and time of year.

Merlin Bird ID: https://merlin.allaboutbirds.org/



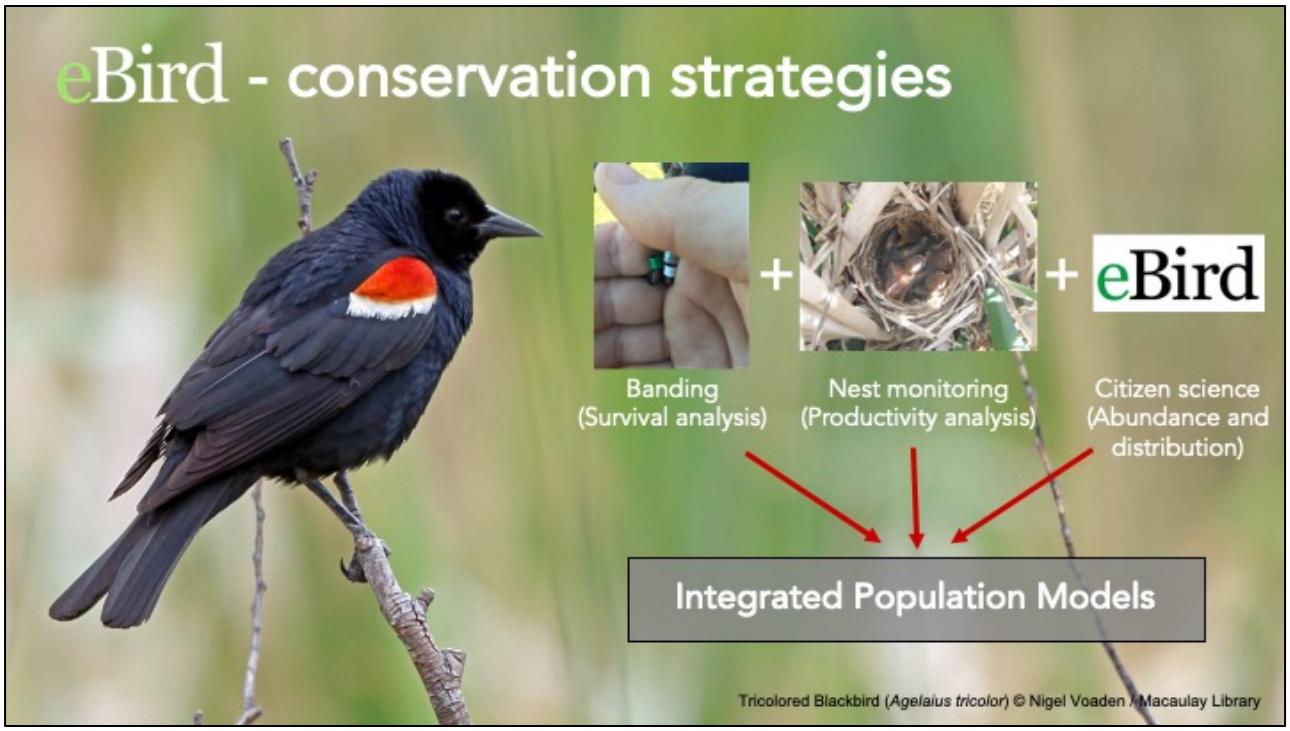
eBird is the world's largest database of public bird observations freely available for science and conservation. eBird observations can be used to produce state-of-the-art models of abundance and distribution, such as these Barn Swallow abundance maps developed by the eBird Science team.

Using eBird for science: https://ebird.org/science/using-ebird-for-science
eBird status and trends: https://ebird.org/science/status-and-trends



As eBird grows, so does our ability to model bird distributions around the world in amazing detail. Analytical range maps powered by eBird data and advanced statistical techniques (such as this range map for Wood Thrush) reveal fine-scale relationships between birds and their environments with incredible accuracy.

eBird status and trends: https://ebird.org/science/status-and-trends



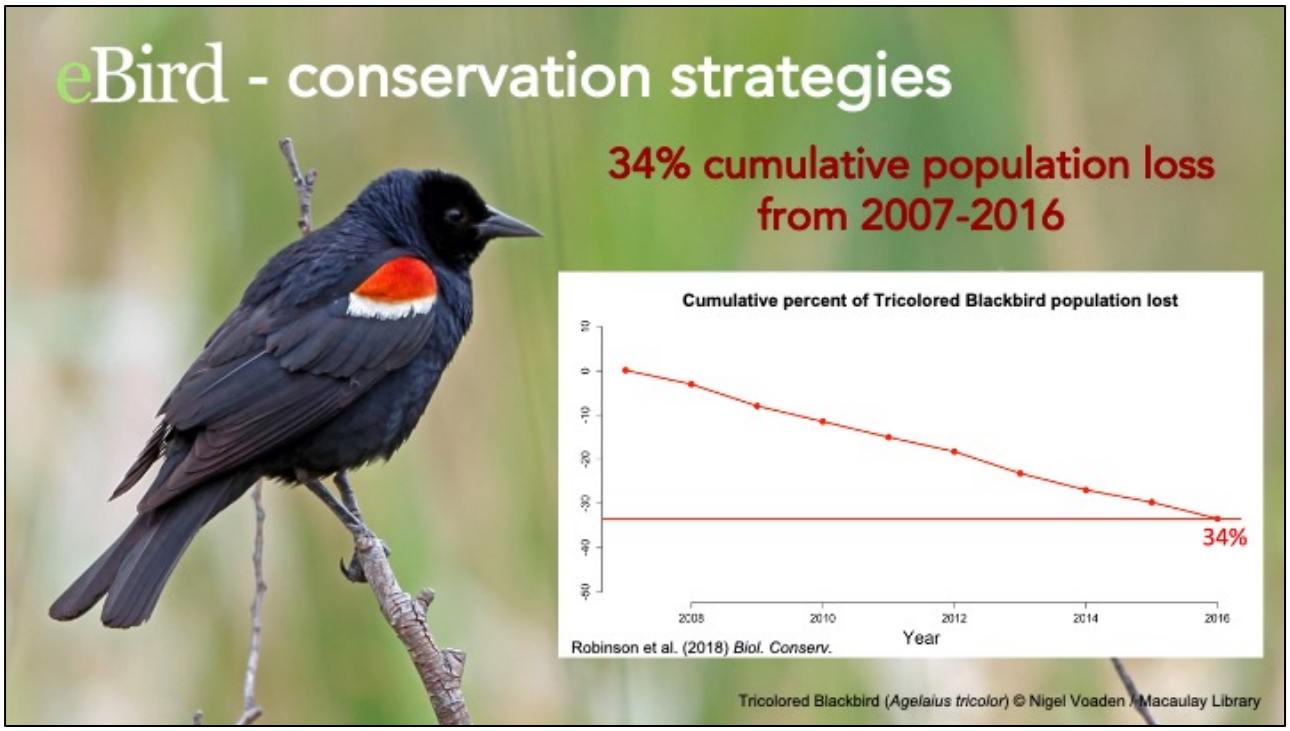
In the following slides we show how eBird data can be used to successfully inform conservation and policy decisions. Feel free to replace or supplement these with examples from your own region!

In this example - the first to use eBird data to model population dynamics - we show how eBird observations can be used in combination with other types of survey data to inform conservation strategies and federal listing decisions.

Approximately 95% of all Tricolored Blackbirds (*Agelaius tricolor)* breed in the US state of California. Since the 1900s there has been a substantial decline in Tricolored Blackbird populations, making them a species of conservation concern. However, previous efforts to list the species as Threatened under the Endangered Species Act had failed due to lack of reliable population models.

Researchers from the Cornell Lab of Ornithology and the University of California used Integrated Population Models (combining eBird observations with structured surveys, banding data, and nesting data) to estimate population trends for Tricolored Blackbirds.

Source: Robinson, Orin J., et al. (2018) "Using citizen science data in integrated population models to inform conservation." *Biological Conservation* 227: 361-368.

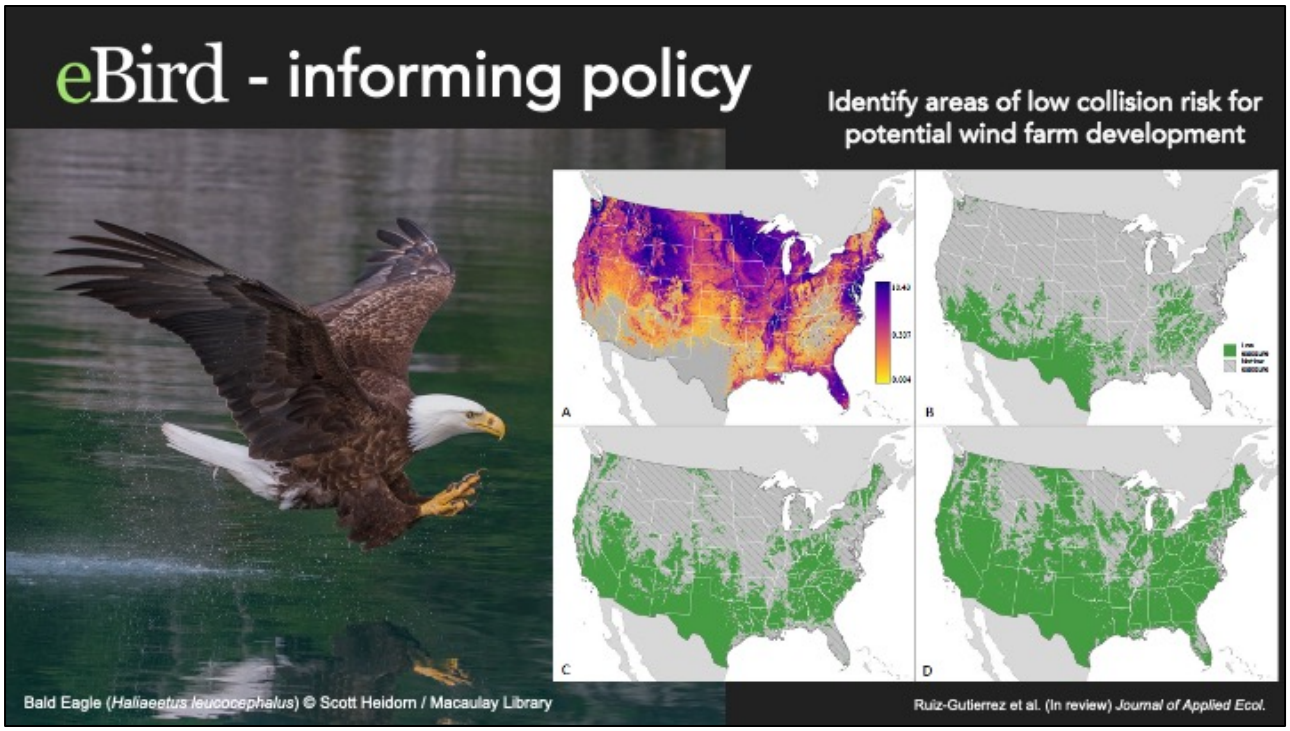


(*continued from previous slid*e) Through Integrated Population Modeling, researchers estimated that Tricolored Blackbird abundance had declined by approximately 34% over a 10 year period.

After looking at banding data, nest productivity data, and eBird observations the team determined that low reproductive rates were likely behind the observed population declines. Furthermore, the southern population was declining much more rapidly due to additional factors including emigration, land use change, and drought.

Thanks to these these eBird-informed results, the Tricolored Blackbird was successfully listed as Threatened under the Endangered Species Act in 2018 after 14 years of petitioning.

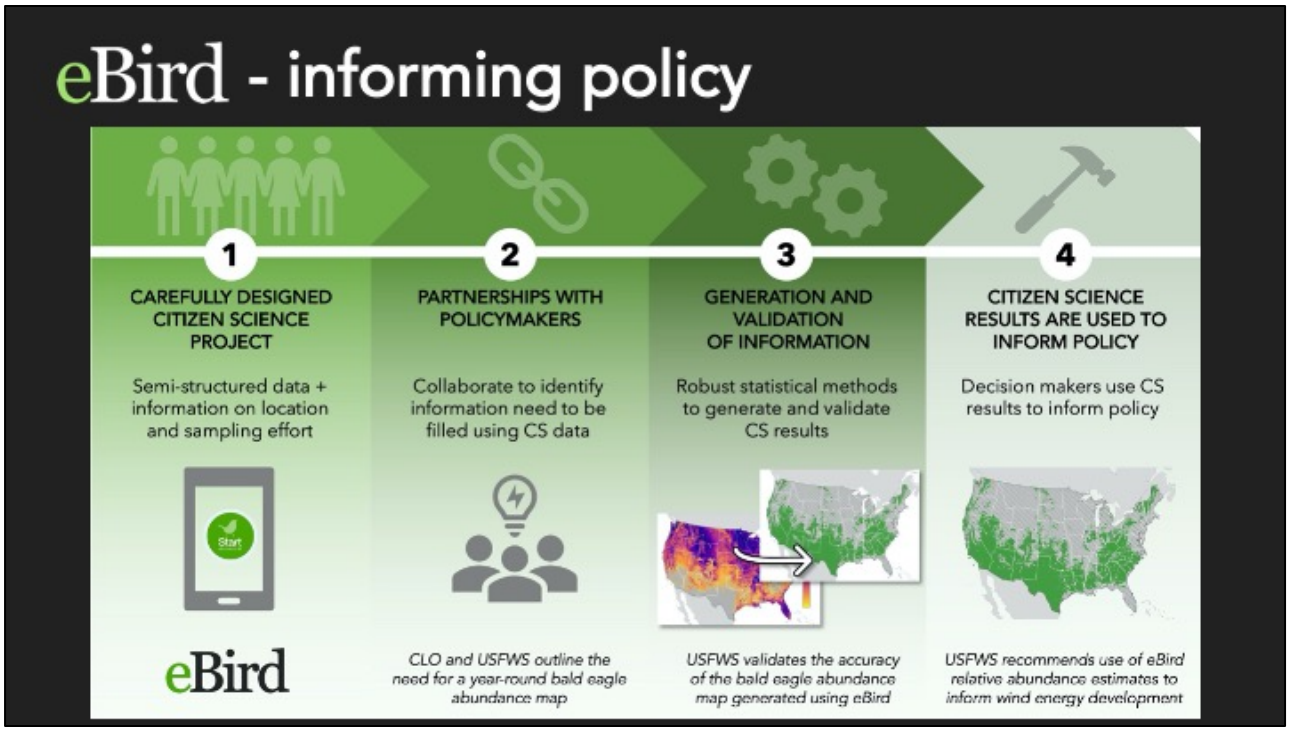
Source: Robinson, Orin J., et al. "Using citizen science data in integrated population models to inform conservation." *Biological Conservation* 227 (2018): 361-368.



The unprecedented volume of eBird data can also be harnessed to assist with policy decisions - such as where to allow certain types of development in order to minimize risk to native birds.

In this example, quantitative scientists at the Cornell Lab of Ornithology partnered with the US Fish & Wildlife Service to map the relative abundance of Bald Eagles (*Haliaeetus leucocephalus*) using eBird data (A, above) and delineate zones of low collision risk for wind energy development projects. In the figure, B-D show areas of low exposure for collision (green) and not low exposure (gray) based on different thresholds of of relative abundance.

For more information see: Ruiz-Gutierrez, Viviana, et al. (2020) “A pathway for citizen-science data to inform policy: a case study using eBird data for defining low-risk collision areas for wind energy development.” Journal of Applied Ecology. *In review.*



This figure, from Ruiz-Gutierrez et al. (in review) demonstrates how eBird works with government agencies like the US Fish & Wildlife Service (USFWS) and other partners to use eBird Status and Trends products for conservation decision-making.

Source: Ruiz-Gutierrez, Viviana, et al. (2020) “A pathway for citizen-science data to inform policy: a case study using eBird data for defining low-risk collision areas for wind energy development.” Journal of Applied Ecology. *In review.*

eBird is made possible by a global network of partners, supporters, volunteer reviewers, and data contributors— thank you!
Every bird counts. Through the power of eBird, your bird observations can make a difference for science, conservation, and education.

Now that you have a better understanding of eBird, we hope you'll get out there and start using eBird for yourself!