Frederick County Office
330 Montevue Lane
Frederick, Maryland 21702
TEL 301-600-1594
FAX 301-600-1588
http://go.umd.edu/frederickextension

BECOME A CITIZEN SCIENTIST IN YOUR OWN BACKYARD

By Maritta Perry Grau, Frederick County Master Gardener, March, 2025

You may have participated in the global Great BackYard Bird Count (GBBC) last month (Feb. 14 through Feb. 17), supported by the Cornell Laboratory of Ornithology and the National Audubon Society. Such participation is a way that individuals can act as "citizen scientists," as information they submit from the annual event helps scientists in their study of the population and habitats of common birds and the scientists' subsequent recommendations.

Beyond the time of the GBBC, you can expand your observations to include the emerging butterflies, bees, other insects, birds, etc., in your own garden. For example, I usually don't see yellow finches in my gardens until around May 15, but in some years, they appear a little earlier. I used not to see robins until late February or early March; now they appear periodically all through the winter.

Reporting such observations can contribute a lot to scientific research. You have many choices of websites and apps where you can submit information about the flora or fauna you have observed. And it's so easy; the University of Maryland Extension Service's article, "Birds, Bees, Buds, Oh My! Citizen Science in your Garden!" explains that "You observe how many times you see a specific type of butterfly visit a group of flowers over a 30-minute period. You record the location of the flowers, the date and the number of butterflies." See our sidebar for a short list of sites/apps that Frederick County Master Gardeners have recommended that you can access through your computer or your phone.

Bumble Bee Watch

One popular website/app is the Bumble Bee Watch (www.bumblebee.org). This is a good site if you are just starting out as a citizen scientist. As you probably already know, bees are among the most helpful pollinators; probably one in every three bites of food you take come from pollinators such as bees. Maryland has approximately 400 native species of bees, and the USA about 4,000 native species, according to the federal Food and Drug Administration.

To participate as a citizen scientist, you can observe and take photos of bees, then upload them to the Bumble Bee Watch site, and use the site's tools to identify the species. You'll find lots of pictures identifying individual species of bees; maps that plot out the bee sightings; a list of the logos of about 20 various organizations that help with efforts to track and conserve bumble bees; and much more.

Budburst

Another popular site is the Chicago Botanical Garden's Budburst.org (https://budburst.org/pollinators-and-climate), an app that you can access through your cell phone. As the CBG notes, referring to a project it has on climate change, "The website describes the organization as 'a community-focused, data-driven approach to plant conservation,'" focusing on "how climate change is affecting plants and their pollinators…Community scientists like you will help us collect data on how plants respond to climate change by tracking their phenology over time. The more data you collect, the more we can understand the effects of climate change, and develop ways to mitigate it." Phenology, CBG explains,

"is the study of the timing of the biological events in plants and animals, such as flowering, leafing, hibernation, reproduction, and migration."

CBG's site includes an interactive map where you can find and observe plants in your area; monitor plant life cycles and plant-animal interactions; and even collaborate with the CBG on one of their ecological projects. For example, currently, the scientists are trying to determine whether monarch butterflies prefer to lay eggs on flowering or on non-flowering milkweed stems. So, as a citizen scientist you would check your milkweed plants to see which ones—flowering or non-flowering, or both—have eggs on them, and perhaps take supporting pictures. Once you had made your observations, you would submit the data to the CBG website. From there, information would be compiled and sent on to research scientists.

e-Bird

Want to know more about birds as pollinators? Try <eBird>, which contains both a website and an app. Quite a few of my fellow MGs recommended this site and its app; you can download the app to your cellphone to ID the birds.

Like their sponsorship of GBBC, Cornell University also sponsors <ebird>, compiling sightings and information from all over the world. The website says that "Your sightings contribute to hundreds of conservation decisions and peer-reviewed papers, thousands of student projects, and help inform bird research worldwide."

Check our website or Facebook for upcoming free seminars, Master Gardener certification classes, gardening information, advice, and publications, as well as other announcements, at the following URLs, or call us at 301-600-1596:
Frederick County Master Gardeners' website, <bit.ly/FCMG-Home-Gardening>;

- Facebook, https://bit.ly/FCMGFacebook;
- Instagram, https://bit.ly/FCMGinstagram
- University of Maryland Extension Home and Garden Information Center, bit.ly/UME-HGIC;
- Frederick County Master Gardeners publications, <http://extension.umd.edu/locations/frederick-county/home-gardening>.

Certainly, you can find more citizen science programs than are listed here. You'll find citizen science projects for everything in flora and fauna, from fireflies to birds and butterflies. Do your research and choose those that suit your interests best; just stick with those whose websites end in -gov, -edu, or -org for the most reliable sites. Here are just a few that fellow Master Gardeners have recommended:

akronzoo.org/frogwatch (frogs and toads)
citizenscience.gov/# [add the specific organization's website]
ebird.org
feederwatch.org (birds)
inaturalist.org (flora and fauna)
mdbluebirdsociety.org (monitoring bluebird boxes)
Merlin.allaboutbirds.org (for birds)
Nature's Notebook: usanpn.org (plant phenology)
scistarter.org/finder

According to the iNaturalist website, iNaturalist is a citizen science project and online social network where users can upload observations of plants, animals, fungi, and other organisms. These observations can include photographs, audio recordings, and notes about the species' behavior, habitat, and other relevant details. (photo from the iNaturalist web site)

Blue Jay & Hawk

A blue jay confronts a hawk, which is keeping an eye out for any tasty mice, voles, or chipmunks that might venture out of hiding. (photo courtesy of the author)

Hawk

A red-shouldered hawk perches on the author's fence to keep an eye out for any small critters that might come his way. (photo courtesy of the author)

If you participated in the February 2025 Great BackYard Bird Count, you might have counted house finches, sparrows, wrens, cardinals, and other birds that commonly visit back yard feeders. At top left is a male house finch; below him is a male sparrow. On the right are two female sparrows. (photo courtesy of the author)