



Red-spotted Purple Butterfly at Deer Grove

Citizen Science Takes Wing

“We are winning our undeclared war against insects—at our peril,” states entomologist and author Doug Tallamy. “Precipitous declines in populations of the European honey bee, the 4,000 species of bees native to North America, and beautiful butterflies like the Monarch and Karner Blue have gotten our attention, but many other insects are disappearing utterly without notice.”

BUTTERFLIES POLLINATE FLOWERS when they do not fall prey to birds as adults, or parasitic insects and spiders while larva. Damselflies and dragonflies eat gnats, mosquitoes, and tiny flies when they aren't being consumed by fish, birds, frogs, or other odonates. Integral to other lives, insects invite inquiry. Citi-

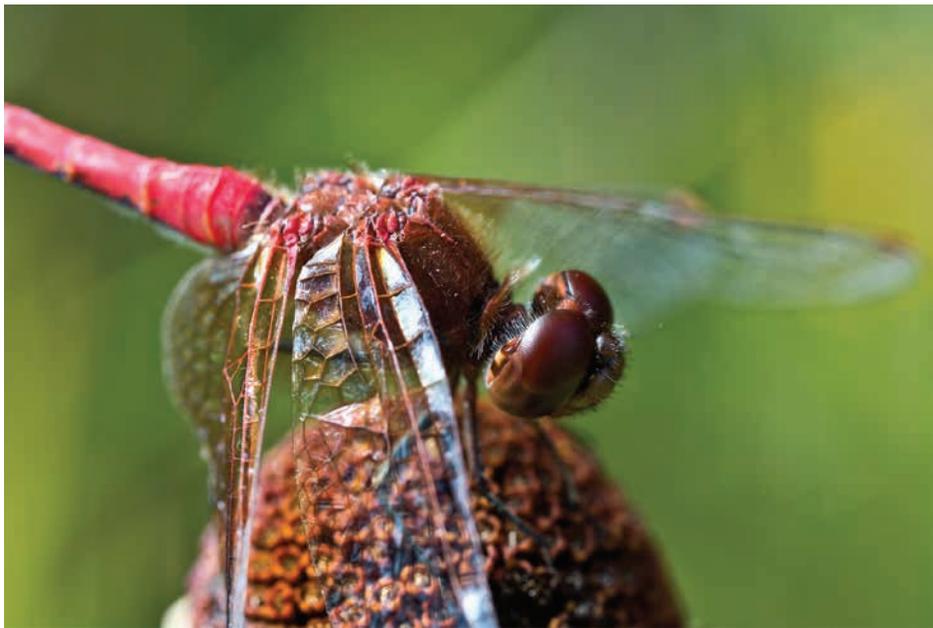
zen scientists play a critical role in collecting data for analysis, understanding, and conservation strategies to benefit all living things.

[Beyond beauty, butterflies inspire action](#)

Over 30 years ago, an idea emerged that would empower everyone from schoolchildren to retirees to observe, record, and submit findings as

citizen scientists. This program took shape as the Illinois Butterfly Monitoring Network (IBMN) and continues to serve as a model for over a dozen butterfly monitoring networks throughout the United States. Each state network contributes data to a national database located at Georgetown University, which in turn provides data to PolardBase, a database that permits researchers from around the world to share information.

Dr. Doug Taron, IBMN founder and Chief Curator of Peggy Notebaert Nature Museum, appreciates the 200+ volunteers in Illinois that make a commitment to participating in a 3-hour training program, then visiting an assigned site 6-8 times for 1-2 hours from Memorial Day through early August. Of the approximately 110 species of but-



Band-winged Meadowhawk Dragonfly at Cuba Marsh



Emerald Spreadwing Dragonfly at Deer Grove

terflies that reside in Illinois, volunteers learn 10-15 species common to their site (based on a core group identified by specialists such as Taron) and use an ISBMN field form to record the date, time, weather, habitat, and species observed.

Even with access to three decades of data, Taron hesitates to quantify his observations due to variation each year. “We have had several really marginal years in a row for butterflies in general,” Taron said, noting “more incursions of

Southern species with great frequency.” During the week of 80 degree F temperatures that hit our area in March 2012, IBMN citizen scientists recorded sightings of fire skipper, sagem (another type of skipper), and pipevine swallowtail, as well as “a half-dozen species that don’t come as far north as the Chicago region.” The U.S. is not alone. More mobile butterfly species from Spain are being found in England, while Alpine species in Europe are becoming confined to higher elevations.

Why Help Monitor?

CITIZEN SCIENCE OFFERS AN OPPORTUNITY TO PURSUE A PASSION

“Insects have been a passion for me for over 50 years,” Rich Teper says. Beginning his journey as a citizen scientist at Sands Main Street Prairie in Cary, Ill., Teper spent 16 years monitoring butterflies for IBMN until his schedule kept him from continuing. In 2016, Teper began to share his fascination with moths through educational programming at Flint Creek Savanna. This spring, the newly retired firefighter will begin to gather data on butterflies and map bumblebee sightings at the Citizens for Conservation site.

It helps others

“I think what makes monitoring such an enjoyable experience is doing something useful,” says Janet Haugen. “They’re using this data,” she adds, noting “there aren’t enough paid scientists to watch what’s going on in nature.” Teper concurs. “There are only a handful of people that enjoy doing the monitoring that we do.”

It’s an adventure

“Every preserve has its little treasures,” Haugen said. “But there can be variations that are surprising. If you keep going back to the same place year after year, you’ll see a lot of old friends, but you’ll see something new.” Monitoring Cuba Marsh, Reed-Turner Woodland, and Deer Grove East—sites within 10 miles of each other—Haugen reflects, “I’ve seen some things at Deer Grove that I haven’t seen at the other two.”

Exploring odonates

Seven years after the IBMN came into being, more than 100 contributors from the odonata community spent the next decade documenting distributions of dragonflies and damselflies through the North American Dot Map Project. Based on the effectiveness of the IBMN, the Dragonfly Monitoring Network emerged to monitor the roughly 100 species of dragonflies and 50 species of damselflies in Illinois.

Renamed the Illinois Odonate Survey (IOS) (www.illinoisodes.org), IOS provides a place for statewide data to be recorded and shared. Much like butterfly monitors, citizen scientists tracking odonates must commit to visiting a specific area at least six times per monitoring season, recording weather conditions, and entering data using the Pollard transect.

Getting Started

1. Get an app or field guide:

- Learn about dragonflies and damselflies and share your findings on www.OdonataCentral.org.
- Submit bee observations to <https://beespotter.org/>.
- Share butterfly and moth findings with <https://www.butterfliesandmoths.org/species/Hyles-gallii>

2. Know what you can do:

"Plan to get out and walk 30 minutes to an hour [during each site visit]," says Haugen, emphasizing the need to take a thorough inventory while remaining on established trails. Monitoring begins in early May and wraps up in October. June and July, especially critical months for collecting data, are hot and buggy. Insect repellent, sunscreen, a hat, and hiking boots are recommended for observations typically conducted between 10 a.m. and 3 p.m. The good news is that insect monitors don't have to conduct surveys in the rain!

3. Volunteer to restore natural areas:

Help provide habitat for butterflies, odonates, and more! Visit www.bactrust.org and www.citizensfor-conservation.org.

4. Attend a training course:

Contact a forest preserve to find out where courses will be offered next winter, then visit Illinois Butterfly Monitoring Network (www.bfly.org) and offer to monitor a site nearby.



Common Buckeye Butterfly at Deer Grove



Eastern Amberwing Dragonfly at Deer Grove

"While there are certainly other freshwater insects that can be informative about ecosystem health, odonates stand out because they are more easily identified, and most are widely distributed," says Dr. John C. Abbott, managing editor of the "International Journal of Odonatology". Both characteristics mean we have far more data (historical and current) for odonates than we do for other groups."

Launching its "Dragonfly ID" app in September 2015, the Migratory Dragonfly Partnership (www.migratorydragonflypartnership.org) provides a database of species in the Western Hemisphere that connects citizen scientists and professionals from Saskatchewan, Canada to Tabasco,

Mexico. So far, more than 1,000 volunteers have contributed more than 10,000 observations at www.OdonataCentral.org.

"We are seeing shifts in the ranges of some species [with] most species from the South moving northward," states Abbott. "Odonates, especially dragonflies, are more vagile than most insects and therefore are doing better than other groups as climate changes and we lose habitat. Damselflies may be more at risk than dragonflies."

Citizen science offers access to larger sets of data that can then be compared with data gathered by professionals in the field. "It helps us put a spot on the map and manage those areas," explains Cook County Forest Preserves Deputy Director of

Resource Management Chip O'Leary. Most of all, citizen science beckons us to take a closer look at what's in our own backyard and actively conserve habitat for the tiny creatures that provide the infrastructure for a food web that includes humanity. 



PHOTO: THOMAS BALSAMO

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