- Keep a journal of natural history and phenology observations from around your house, neighborhood, or favorite conservation area.
- Share your observations of phenology and species occurrences with citizen science networks such as *eBird*, *iNaturalist*, and the USA National Phenology Network. Researchers investigating changes in plants and animals around the world rely on data from these organizations.
- Join an advocacy group and encourage government agencies and community organizations to take action to address climate change and the loss of biodiversity.

Newton Conservators organizes invasive pulls to remove Japanese knotweed and other invasives

- Change how you personally live and encourage the local government to reduce its use of fossil fuels, protect native habitats, and adopt other sustainable practices.

Conclusion

Over the past century, protecting natural habitats, as carried out by Newton Conservators, the Newton government, and other organizations, has proved to be the best overall conservation strategy. Now, abundant evidence shows that climate change and other landscape changes are already impacting natural systems, even in protected areas, and contributing to the decline and local extinction of well-known wildflowers, trees, and shrubs. The protection of conservation areas has slowed the loss of native species like the rattlesnake plantain I saw in my youth but has not stopped it. To stem further losses, we must not only preserve native habitats: we must also work to slow or stop further climate change. For graphic sources see last page. ◆

Could Bugging be the New Birding? (Part 2)

Editor's Note: This article is the second of two parts, with the first in the Fall 2025 newsletter.

Henshaw Haven front yard pollinator garden

In Part 1 of this article, we discussed the similarities between birding and bugging, how native plants are important for both, and some helpful hints and techniques for taking good photos of bugs, especially with your smartphone.

The great thing about bugging is that you don't need to be an entomologist to identify bugs. For birding, numerous phone applications, such as *Merlin*[1], have been developed to aid identification by characteristics, photos, or sounds, or to keep records of sightings using apps such as *eBird*[2]. Fortunately, similar free resources are also available for bugging!

Perhaps the most effective aid for bug ID is the amazing *iNaturalist* application[3]. *iNaturalist* works not only for bugs

Continued next page

…Could Bugging be the New Birding? (Part 2) continued from page 3

but also for birds — and, in fact, for any living thing! In April 2025, a newer version was released for the iPhone, with an Android version with the same user interface to follow at some point. The latest version includes a feature that lets you point your camera and instantly identify subjects as you pan — excellent for a quick check of a bug, bird, or plant ID. *iNaturalist* not only assists with identification, but also can add your observations to a worldwide database and maintains a record of every observation submitted. *iNaturalist* does have a simpler companion app for casual users called *Seek*[4] that does ID only without a database submission component. Some smartphone photo apps now even automatically suggest the photo's subject. An additional helpful ID resource is the *BugGuide* website[5], which accepts bug photos. As with printed field guides for birds, there are many bugging field guides available, for example, a New England guide[6] or one for North America[7].

iNaturalist identifications rely primarily on the photos you submit. The great advantage of smartphone photos is that they contain not only the image but also the time and location where the picture was taken. Although you can take photos within the *iNaturalist* app, for optimal results, it is usually better to capture pictures of your bug using your standard smartphone "camera" application and deal with ID later. I typically take photos of a bug and later review them to select the best ones, considering lighting, focus, and viewing angle. Using the built-in editor in your phone's "photo" app, you can easily crop the pictures and improve contrast, brightness, and sharpness before importing them into the *iNaturalist* application. The app allows you to submit multiple photos, which provides more info for a definitive ID; it is helpful for your first selection to be your most representative example, appropriately cropped.

The app will utilize its AI capability to display a TOP ID SUGGESTION followed by a list of OTHER SUGGESTIONS, each with a relative numerical probability. You can easily compare its possible choices to your own photo. By clicking on the info icon for a candidate selection, you can view additional images in various life cycle stages, a text description, a map displaying other observations for that bug worldwide, and more. It's always interesting to zoom the map into your current observation to see if there were other nearby sightings. It was surprising to discover how many times a particular bug from our garden was the first reported observation in Newton.

You can accept one of *iNaturalist's* suggestions or, if not certain, you can select the main genus ID or simply enter your own more general category. If you submit a bug observation, other *iNaturalist* users can weigh in on the ID to confirm your suggestion or propose an alternative. When there is sufficient consensus, your observation achieves "Research" level, meaning that it could be used by scientists in their studies or projects.

You can be a citizen scientist and contribute to the worldwide database on insects by reporting your observations on *iNaturalist* — arguably the largest global citizen science project. Recently, a researcher on ground-nesting bees contacted me, interested in more details and video of an unusual bee I had submitted while on a picnic at a state park. In the past, some of my garden mystery bees were identified via *iNaturalist* by Heather Holm, author of an excellent bee guide[8].

In preparation for the inaugural Newton Community Pollinator Garden Tour in September 2023, I looked through the *iNaturalist* observations from our garden and decided to create a poster of the bugs that were observed — because a pollinator garden needs pollinators in addition to plants! It was truly surprising to find more than enough species to fill the 96 grid spots on the poster, which has since become a staple at our Newton Conservators' booth at various fairs and festivals, probably due to folks' fascination with bugs.

Over the past few garden seasons, I have encountered some truly interesting bugs. Here are a few of my favorites:

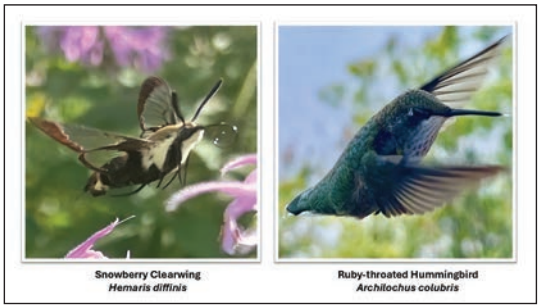
- **Zabulon Skipper (*Lon zabulon*)** — This is a small and very active butterfly that most folks have probably never heard of. When it lands on a plant, it appears more 3D-like, in contrast to most butterflies, which overlap their wings and fold up flat. The males are a rich brown color with yellow highlights. At times, I've seen up to three at once in our garden. Keep an eye out for this and other beautiful "skippers" in yours!


Zabulon Skipper
Lon zabulon

- **Bi-colored Striped Sweat Bee (*Agapostemon virescens*)** — These small native "bee-uties" are the gems of the bee world in our garden, often found on false sunflowers. They are named sweat bees because they are thought to be attracted to perspiration to lick the salt. It is their shiny emerald-green upper bodies that draw your eye as they diligently pack copious amounts of pollen onto their legs.


Bicolored Striped Sweat Bee
Agapostemon virescens

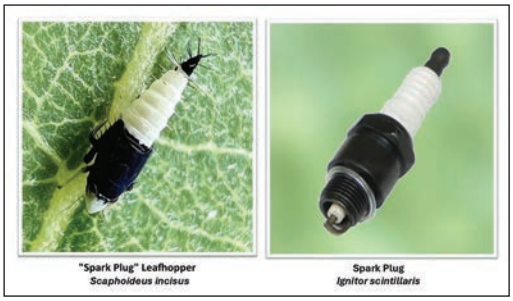
- **Snowberry Clearwing (*Hemaris diffinis*)** — When the bee balm is in bloom, these beautiful daytime moths come to visit. Their "clearwing" name comes from the fact that their wings have transparent windows. However, it is their uncanny resemblance to hummingbird behavior that really captures your attention. Unlike most moths whose wings flutter more like butterflies, the wings on these moths flap quite rapidly, have a small tail, and feed by hovering from blossom to blossom, just like a hummingbird. Because of this, they are a little more challenging to photograph. I often take a video and then try to extract individual frames to use. Several other varieties of hummingbird-like moths have visited the garden in recent years as well — not to mention actual ruby-throated hummingbirds, which are also officially considered pollinators!


Snowberry Clearwing
Hemaris diffinis
Ruby-throated Hummingbird
Archilochus colubris

- **Red-banded Leafhopper (*Graphocephala coccinea*)** — One of the prettiest and most colorful bugs found in our garden has been this leafhopper, a slim, tiny insect jumper that you may not even notice. They seem to love hanging out on common milkweed leaves. Their red, blue, green, and yellow coloration is so festive that it earned this insect its alternative name — the candy-striped leafhopper! As a member of the "sharpshooter" family, perhaps their most interesting characteristic is the ability to shoot honeydew droplets out of their rear end. The first time I saw this, it looked like a little flashbulb going off. But under close observation, a tiny sphere of excess honeydew forms and can be flung in different directions at very high speed — quite a trick! Apparently, ants and other insects appreciate this special treat.


Red-banded Leafhopper
Graphocephala coccinea

- **"Spark Plug Leafhopper" (*Scaphoideus incisus*)** — This is another small leafhopper whose nymph form bears an uncanny resemblance to an automotive spark plug. There is no official common name for this insect — just its Latin nomenclature. It was a little difficult to figure out which end was which with this critter. When I first encountered one on our common milkweed leaves and submitted it to *iNaturalist*, it was a long time before someone else identified it; mine was one of the first observations in New England. Subsequently, another was found locally on a swamp milkweed leaf at Dolan Pond Conservation Area. Such unusual creatures may abound in Newton, but there are not enough curious observers yet!


"Spark Plug" Leafhopper
Scaphoideus incisus
Spark Plug
Ignitor scintillaris

Bugs suffer from not being as cute as birds to many, except maybe for butterflies or ladybugs. In fact, it seems humans have a history of trying to kill off as many bugs as possible, directly with pesticides and bug zappers, or indirectly by draining swamps, creating grass lawns, and over lighting our night environments. Insect populations have precipitously declined in recent decades, a phenomenon termed "Insect Armageddon"[9,10], which ultimately would not bode well for human survival. Doug Tallamy's video, *Restoring Insects*[11] is recommended viewing for background on bugs' importance and concrete steps we can take.

Taking up bugging can be a small step to raising awareness and appreciation of those creatures with which we share the planet. With over a million known insect species, compared to around 11,000 known types of birds, there is a lot to discover for the amateur citizen scientist — you might even find a bug thought extinct or even a new species! Hopefully, you will be inspired to give bugging a try — and avoid not knowing what you've got 'til it's gone! ◆

Ted Kuklinski

Please see references for this article on pg. 6

Henshaw Haven Garden Visitors

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WINTER 2026 GUIDED WALK

Register for the walk at https://newtonconservators.org/events. The trip leader will contact participants about any event changes.

Sunday, January 11, from 11-12:30 pm

Bare Trees & Naked Shrubs: Woody Plant ID at Kennard Park

Jeff Adams

Join area naturalist Jeff Adams in this winter walk in Newton's Kennard Park as he identifies trees and shrubs without their telltale leaves. Discover how to identify plants by their branching patterns, bark, buds, galls, and any persistent fruits that remain after the end of autumn. Jeff will also look at winter weeds — hardy non-woody plants that stand up tall even through the colder months — and share a trove of natural history and folklore about various plants. Jeff has led walks for a variety of area organizations, including the Friends of the Fells, Lincoln Land Conservation Trust, and Newton Conservators. Dress for an extended time in wintry weather and wear sturdy shoes. Kennard Park's terrain is uneven and, in some places, hilly. Meet at the parking lot off Dudley Road. Enrollment is limited to 20 people. *Rain date: Sunday, January 18, 11 am – 12:30 pm.*

Trip Leader: Jeff Adams (781-866-8311) (jeffreyradams@verizon.net)