

Ohio Dragon-Flyer

Newsletter of the Ohio Odonata Society



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Looking Forward to March! – Jim Lemon

Help Wanted! Still looking for a volunteer to be OOS Secretary/Treasurer.

Reminder! Small Grants Applications are due March 15.

Cover: Cyrano Darner *Nasiaeschna pentacantha*.

George Rogers Clark Park, Clark County, Ohio, June 17, 2021.

Olympus E-M1MkIII, 300mm, 1/2500, f/8, ISO1250, Terri Norris.

A Planning Resource from the *Other* OOS

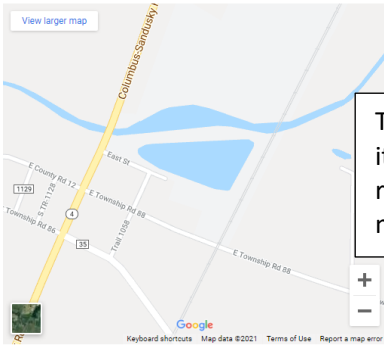
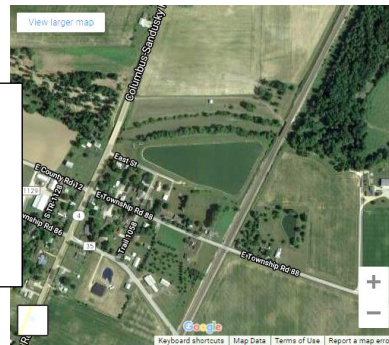
The Ohio Ornithological Society maintains the informative bird hotspot webpage, [Birding in Ohio](#) which makes a nice addition to the many resources available to members of the Ohio Odonata Society. Not every bird hotspot will be an ode hotspot, but the site provides maps and descriptions to help us determine whether one might be.



Hotspots are organized by both County and Region to facilitate planning. So, let's put it into play. We are determined to grab a county record this year. Checking iNaturalist we discover that Seneca County has only 353 observations and 41 species by 31 observers. Checking County Records, we determine that Seneca County has no record for Slaty Skimmer, Unicorn Clubtail, Comet Darner, Common Baskettail and Halloween Pennant. All these species have been observed in adjacent counties, and there is a good possibility they are also in Seneca County. We could go to [Ohio Counties by Region](#), but for this trip, we decide to concentrate our efforts solely on, perennially underreported, Seneca County, and so we go to [Hotspots by Ohio County](#) and click on Seneca.

On the Seneca page we find 29 birding hotspots. We can quickly discard many of them such as the Seneca County Landfill (attractive to gulls but not odes). Alphabetically, the first hotspot on the list is Attica Reservoir. We determine that it might hold habitat for our target lentic species, and we click it.

We find a Google map link and this helpful description from Vic Fazio: *"This older reservoir is now an Ohio Department of Natural Resources property with signage. Though small, it is interesting not just for the pond but the riparian corridor and a small woodlot to the northeast. One just pulls right up to it."*



Toggle the Google map between satellite view and map view, and it is easy to discern the large creek running just north of the reservoir. Interesting stop for members of *both* OOSs, and, just maybe, pick up a county record.

Ohio's Rare Emeralds

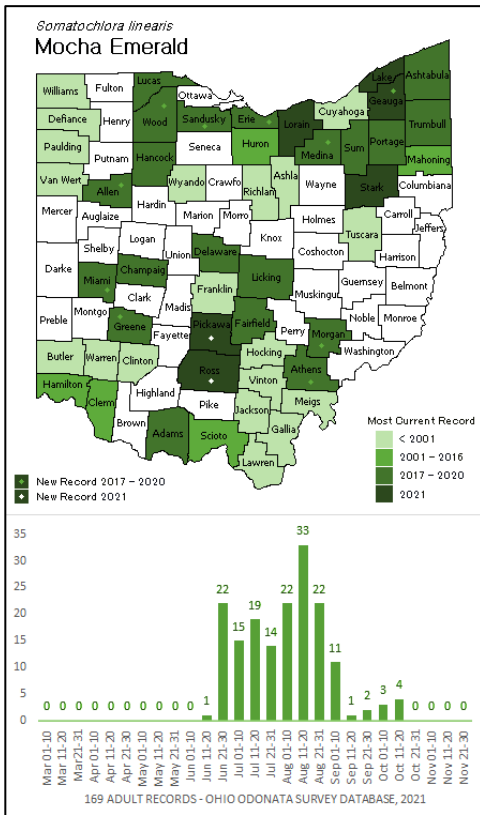
Seventeen Emerald species (Corduliidae) have been recorded in Ohio. Only one species, Prince Baskettail, is common. Only one other species, Common Baskettail, has more than 200 observations. The others are probably here, we're just not in the right spot and the right time. Emeralds can generally be characterized by short flight season, specific habitats, rarity, and dark coloration. But those eyes! In the right sun angle, they glow like the jewels of their name. Jim Lemon

The Corduliidae family includes Baskettails *Epitheca*, Boghunters *Williamsonia*, Shadowdragons *Neurocordulia* and Shadowdragons *Helocordulia*, but this article presents eight emeralds in the Orders: Common Emeralds *Cordulia*, Striped Emeralds *Somatochlora* and Little Emeralds *Dorocordulia*. In order of Ohio rarity, from uncommon to (likely) extirpated: Mocha Emerald *Somatochlora linearis*, Clamp-tipped Emerald *Somatochlora tenebrosa*, Racket-tailed Emerald *Dorocordulia Liberia*, Brush-tipped Emerald *Somatochlora walshii*, American Emerald *Cordulia shurtletti*, Plains Emerald *Somatochlora ensigera*, Incurvate Emerald *Somatochlora incurvata* and Hine's Emerald *Somatochlora hineanna*,

So how do we find one of Ohio's rare emeralds? Let's start with the Mocha and the Clamp-tipped. They have been observed throughout the state, so we are concerned mostly with the two variables, habitat and Ohio flight dates; look for them in forest streams from late June to early September. The next three, Racket-tailed, Brush-tipped and American are rare and range restricted to Northeast Ohio. These three are typical in bogs and fens. Their Ohio flight is earlier and shorter than the Mocha and Clamp-tipped. The next emerald, the Plains, is rare and range restricted; the Northwest Ohio observations are on the eastern-most edge of the Plains Emerald range and it has no recent Ohio observations. Look for the Plains in slow-moving streams and small rivers from mid-June to mid-August. It is not likely that the Incurvate and the Hine's remain in Ohio. The single Incurvate record is so far out of accepted species population range that accuracy of the record must be questioned. The Holy Grail of Ohio emeralds, the Hine's, discovered in Ohio, has no recorded observations since 1961 despite focused efforts to find them. These are the Cliff Notes; more detailed study of range, Ohio flight dates, habitat and natural history will increase your odds of discovering an Ohio rare emerald.

Ohio's emeralds are all steady fliers and all feed in flight making identification more difficult. From a distance, the bodies of most appear dark with indistinct marking. Up close they display a remarkable palette of dark metallic blacks, browns, blues and greens, most marked with yellow or yellow-brown stripes and spots. Yellow thoracic marking may become obscured in older individuals (Paulson 2011). Immature emerald eyes are brown or rust brown, but after a few flight days, most turn vivid emerald-green. When they perch, the long-bodied emeralds hang up like darners, but the smaller ones often perch flat on leaves. Wings are generally clear but may darken with age.

Author: Jim Lundberg. Charts: Jim Lemon.

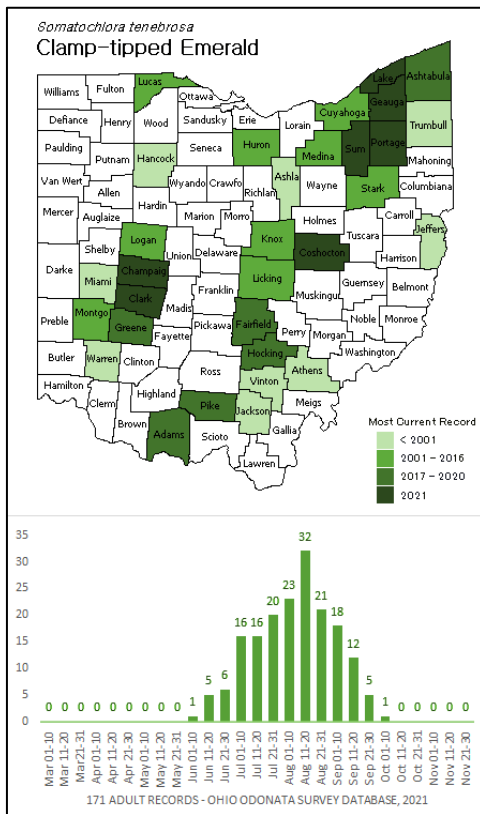


Mocha Emerald *Somatochlora linearis*

Ohio Distribution: Scattered through the state. Ohio flight: Last week of June to third week of October. Habitat: Small to mid-sized streams. Flows through swamps and wooded areas. Sand and gravel bottoms may be preferred (Paulson 2011).



"Mocha Emerald (*Somatochlora linearis*)" by dmills727 is licensed under CC BY-NC-ND 2.0 Image cropped from original

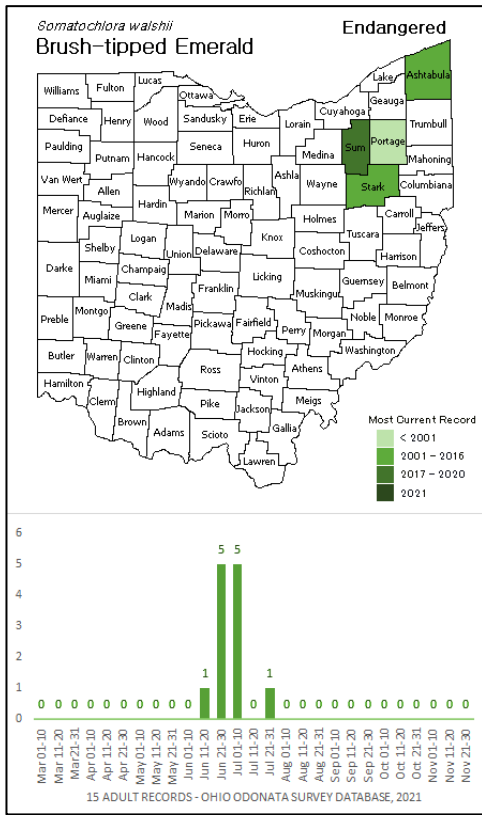


Clamp-tipped Emerald *Somatochlora tenebrosa*

Ohio distribution: Scattered throughout the state. Ohio flight: first week of June to last week of September. Habitat: Small forest streams with rapids and pools and much leaf litter. Almost always in the shade. Males fly up and down streams at knee height. Often perch at knee height (Paulson 2011).



"File:Somatochlora tenebrosa 21407936.jpg" by Matt Schenck is licensed under CC BY 4.0 Image cropped from original.

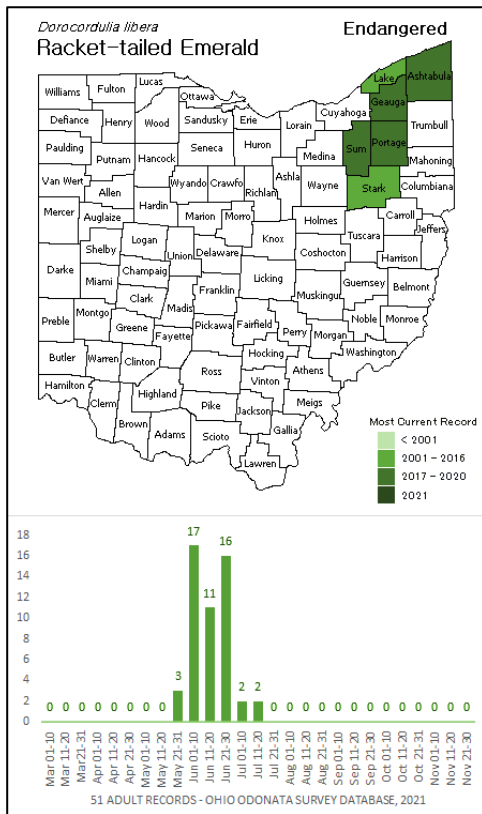


Brush-tipped Emerald *Somatochlora walshii*

Ohio distribution: Northeast Ohio – Observations in Ashtabula, Portage, Sum and Stark Counties. Ohio flight: second week of June to last week of July. Prefers slow clear streams through bogs fens and marshes, also lake or pond outlets. Makes patrol slowly over streams and wetlands. (Dunkle 2000. Paulson 2009).



"male brush-tipped emerald dragonfly" by Andrew Reding is licensed under [CC BY-NC-ND 2.0](https://creativecommons.org/licenses/by-nc-nd/2.0/)

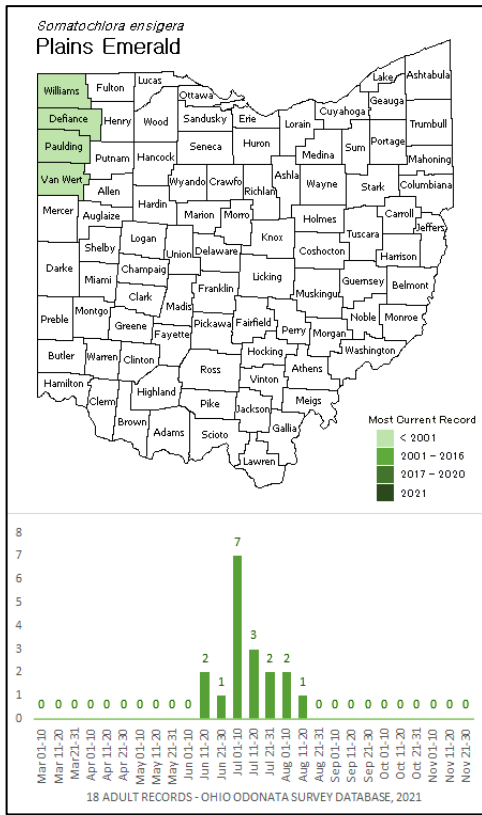


Racket-tailed Emerald *Dorocordulia libera*

Ohio distribution: Northwest Ohio – no observations south of Akron. Ohio flight: Last week of May to third week of June. Habitat: Swamps, bogs wooded wetlands, lake coves, bogs and bog-edged slow streams. Forest roads and trails (Paulson 2011).



"Racket-tailed Emerald" by BCNH09 is licensed under [CC BY-SA 2.0](https://creativecommons.org/licenses/by-sa/2.0/)

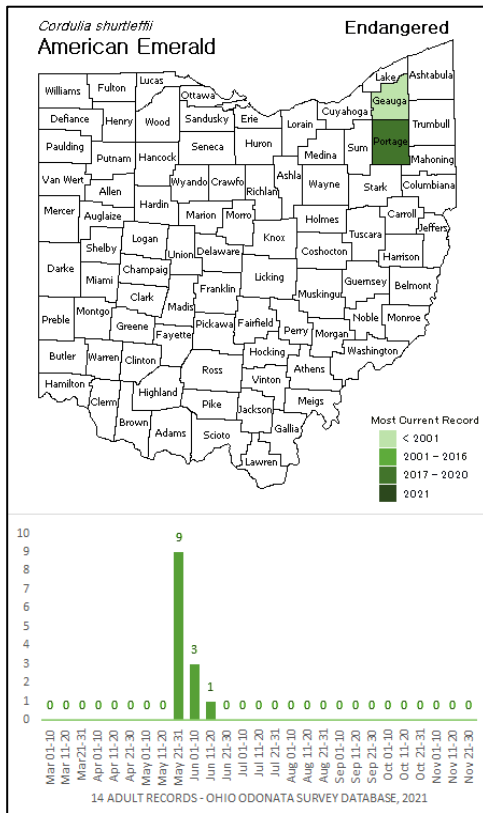


Plains Emerald *Somatochlora ensigera*

Ohio distribution: Northwest Ohio – historical observations in Williams, Defiance, Paulding and Van Wert Counties. No recent observations. Ohio flight: second week of June to third week of August. Slow-moving streams and small rivers with riffles and pools (Paulson 2011).



Plains Emerald, Elm Creek Park Reserve, Minnesota. July 11 2018, Steve Collins



American Emerald *Cordulia shurtletffi*

Ohio distribution: Northeast Ohio – Observations in Geauga and Portage Counties. Ohio flight: last week of May to third week of June. Habitat: typical Beaverpond lakes and bog ponds and fens and marshes in forests (Dunkle 2000). Forages along forested openings and edges. Often basking on leaves. (Paulson 2011).



"American Emerald (*Cordulia shurtletffi*) male." by dmills727 is licensed under CC BY-NC-ND 2.0

Mighty Morphin' Dragons, part 1

Sally Isacco disacco@roadrunner.com | Jim Lemon jlem@woh.rr.com

Many Odonata IDs are straightforward. Size, color, and pattern can lead you directly to the correct ID. But there are others that can be confusing - either as closely appearing species, or confusing individuals. Here we'll look at some of the ways individuals of a species can present confusion.

Some terms:

Morphology: the study of the size, shape, and structure.

Morph: the term that refers to various developmental forms or stages in the life span of an organism. The different forms or stages can also be stated as "morphs."

Sexual Dimorphism: the differences in appearance between males and females of the same species, such as in colour, shape, size, and structure.

Heteromorphic: variation in physical characteristics in a population.

Andromorph: Andromorph is a female with male physical characteristics. (Gynomorph, in relation to Andromorph, would be the typical female physical characteristics.)

Polymorphism: the occurrence of two or more different forms or morphs in the population of a species is referred to as polymorphism.

Dragonfly and Damselfly species have varying appearances or presentation depending on gender. Some vary more than others, but it is always important to consider whether the Ode in question is male or female.

Let's look at an example of a species that demonstrates many of the morphs. Eastern Forktail *Ischnura verticalis*. Here are photos of mature male (left) and mature female (right), typical to what you would find in any field guide. Note the bright coloration on the male – green thorax, eyespots, prominent shoulder-stripe, pale blue “taillight” with square black dots on abdominal segment 8 and 9. The female is uniformly dark, with complete shoulder stripe. This represents *Sexual Dimorphism*.



Eastern Forktail. Male, Grand Lake St. Marys, Auglaize Co, Jul 13, 2019. Female, Darby Headwaters, Logan Co, Aug 9, 2018. Jim Lemon



Here we see the typical pair. Note how the female abdomen is “stout” relative to the male. The given here is that both male and female are sexually mature since they are “in wheel.”

It should be noted that mature Fragile Forktail *Ischnura posita* females can be very similar to Easterns, sometimes impossible to tell the difference in photos.

Eastern Forktail. Mating pair. McCracken Fen, Logan Co, Sep 12, 2017. Jim Lemon

Now consider some of the variations (ladies first). Some newly emerged females are bright orange (below, left). Some, but not all. This would be an example of developmental change. The orange coloration does not persist as individuals age. Other Ohio *Ischnura* species can also have orange-form females (most commonly Citrine Forkail *I hastata* and Lilypad Forktail *I kellicotti*). While considered a sign of immaturity, sometimes you see orange females in wheel (below, right).



Eastern Forktail. Orange-form female, Urbana, Champaign Co, Apr 30, 2017. Pair, Garbry Big Woods, Miami Co, Aug 15, 2019. Jim Lemon

Several examples of *Andromorph* females. Note the green thorax (left and bottom), the blue thorax (upper right), the variety of markings on abdominal segments. The upper right photo shows reddish eyes which can indicate recent emergence. The lower photos show pruinosity on the abdomen, which typically represents maturity. Mature females with different coloration would be polymorphism. The eyespots on all four photos look like males. *Andromorphs* are thought to experience reduced male harassment at oviposition sites.



Eastern Forktail. *Andromorph* females. Upper left, Cedar Bog, Champaign Co, Jun 28, 2017. Upper right, Urbana, Champaign Co, May 26, 2020. Lower left, Garbry Big Woods, Miami Co, Jul 19, 2017. Lower right, McClean Park, Allen Co, Jul 17, 2019. Jim Lemon

The last female couplet shows mature Eastern Forktail (left) with similar angle on Fragile Forktail (right). Both individuals are pruinose (waxy gray cast). You can just make out the complete shoulder stripe in the Eastern and the break in the shoulder stripe of the Fragile.



Forktails, Urbana, Champaign Co. Left, Eastern Forktail, Apr 30, 2017. Right, Fragile Forktail, May 23, 2021. Jim Lemon

Male Eastern Forktails have some variability, but not to the extent of the females. When newly emerged, colors can be pale. The left photo shows typical teneral male, you can make out the block spots on S8 and S9. The right photo shows some color variation – pale thorax, “taillight” pinkish rather than blue, both with blocks also observable.



Eastern Forktail.
 Left, Oakes
 Quarry, Greene
 Co, May 8, 2018.

 Right, Shaw
 Wetlands, Fayette
 Co, May 15, 2019.
 Jim Lemon

Males can also display variations in shoulder stripe and pigmentation on abdominal segments. Shoulder stripe can be reduced, broken, or nearly absent. Blue pigmentation can have rounded edges or some reduction. Some of this variability is related to maturation, some to heteromorphism.

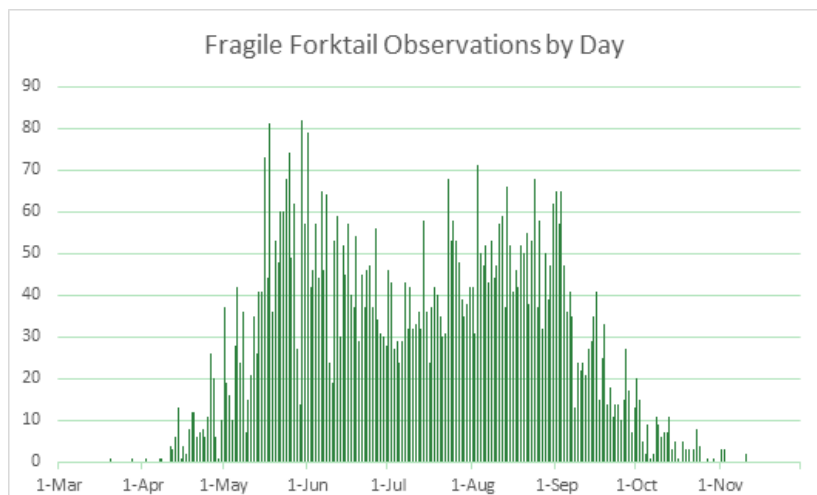


Eastern Forktail. Upper left, Cedar Bog, Champaign Co, Apr 22, 2019. Upper right, Adams Lake, Adams Co, May 22, 2019.
 Lower left, Cedar Bog, Champaign Co, Apr 25, 2017. Lower right, Springville Marsh, Seneca Co, Jun 6, 2019. Jim Lemon

Q&A: The making of the Flight Charts

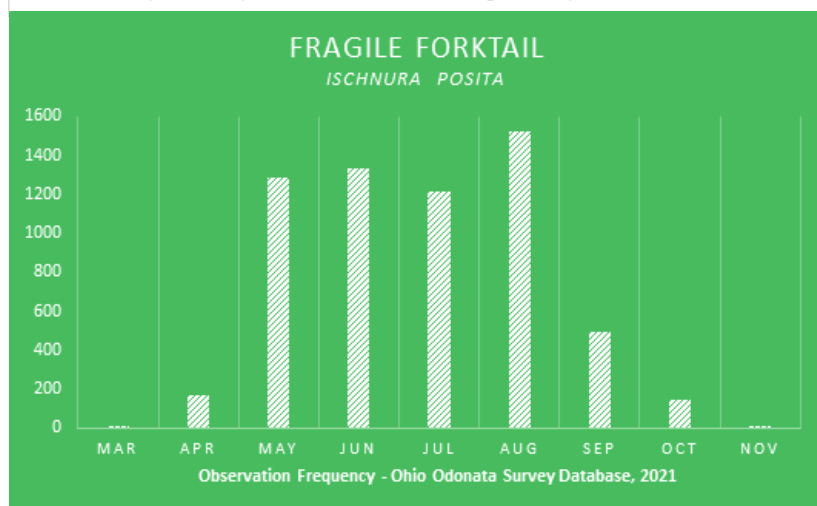
Jim Lemon jlem@woh.rr.com

There was a question on the flight charts - How were the date intervals determined? Basically, a process of tweaking. Start simply. Run the numbers for observation by day. (Target species was Fragile Forktail *Ischnura posita*.)



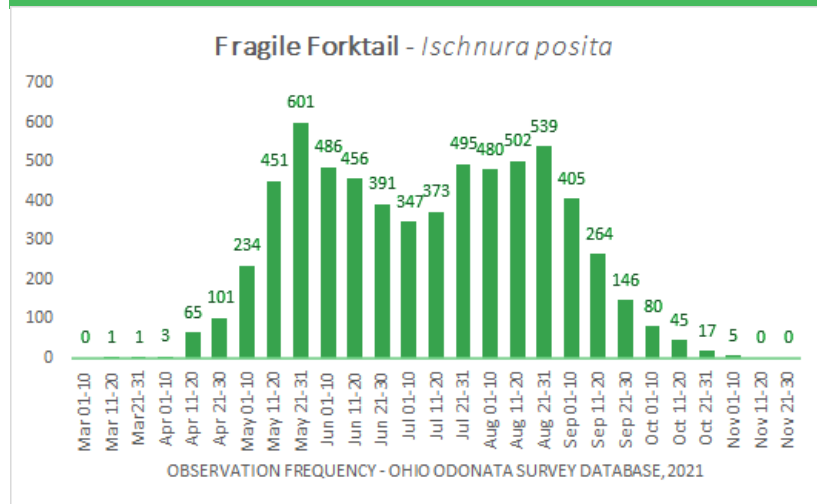
This was pretty cool but seemed busy for interpretation.

Next, jump to monthly summary. Same species.



Not bad, but a little blah - even more so for species with sparse data.

Let's try something in between - 10-day intervals. Same species.



Yes, that's the ticket. Space it to show the date labels, add the column numbers. End of May is a great time to look for Fragile Forktail, but if you miss the May peak, there's a second peak in Aug!

The Dragons are coming!

Jim Lemon jlem@woh.rr.com

Yes, it's possible to see Odonata in March. Maybe not right away, but I've seen my first Red-winged Blackbird, so I'm hopeful to survive the winter. Here's a map of Counties with observations in March. Darker where observations are in the last 5 years. Montgomery and Coshocton have one or two more than the other counties. Notice counties with observations – north to south, east to west. If your county isn't purple, here's your chance.



Here is a table of the species recorded in March.

Species	Earliest Flight Date	Observations All Data	Observations Recent Years	Migratory?
Variiegated Meadowhawk <i>Sympetrum corruptum</i>	12-Mar	4	1	Y
Fragile Forktail <i>Ischnura posita</i>	20-Mar	2		
Common Green Darner <i>Anax junius</i>	20-Mar	24	23	Y
Swamp Darner <i>Epiaeschna heros</i>	29-Mar	1	1	

Many of our earliest sightings are individuals that are migrating on the early stormfronts. They can drop out of the sky at any wetland, or backyard.