

Newsletter of the Ohio Odonata Society

Ohio Dragon Flyer



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Cover Image

Illustration for the Dragonfly Society of the Americas 2024 Meeting in Ohio by Nature Artist and Writer, Julie Zickefoose.

<https://www.juliezickefoose.com/index.php>

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Ohio Odonata Society Dues

Sheree Cyra, Treasurer

The OOS board has re-established dues for our members at \$15/year. The OOS board has also decided that, going forward, the designated membership year is the calendar year – January 1st to December 31st. However, dues paid anytime in 2024 will cover the remainder of 2024 *and* the entire calendar year of 2025.

Dues cover OOS costs which include being an institutional member of the Ohio Biological Society, annual meeting costs, a potential small research grant and the recurring costs of the website platform. Ohio Odonata Society website access and newsletters remain open to all regardless of membership. Future plans include online OOS registration, but there are two ways to submit dues this year:

1. DSA meeting registration. DSA has put our OOS dues on the DSA meeting registration form for our convenience.
2. Cash, Check or Certified Check for \$15 payable to The Ohio Odonata Society, mailed to our Treasurer, Sheree Cyra, 104 Redder Ave, Dayton, OH 45405. Expect mailed-in dues to be processed in July.

DSA Pre & Post Field Trips

Dave McShaffrey

Hey, Dragon Flyer readers, the Dragonfly Society of the Americas meeting, hosted in Marietta by the Ohio Odonata Society, is fast approaching (June 28-30).

We are trying something that the DSA has never done, and we are counting on an Ohio Odonata group effort to pull it off. DSA has a tradition of pre-meeting and post-meeting field trips, usually as one

group travelling together. This year, we are changing it up with smaller groups on multiple field trips statewide. Attendees may be driving to Marietta from another state or one of several airports in the region. On their drive in and out, they will join up with geographically-convenient field trips. The Pre & Post Field Trip dates are June 27 & July 1.

Multiple field trips require multiple guides. Are you available to show off one of your favorite hotspots? You can guide field trips for one or both dates.

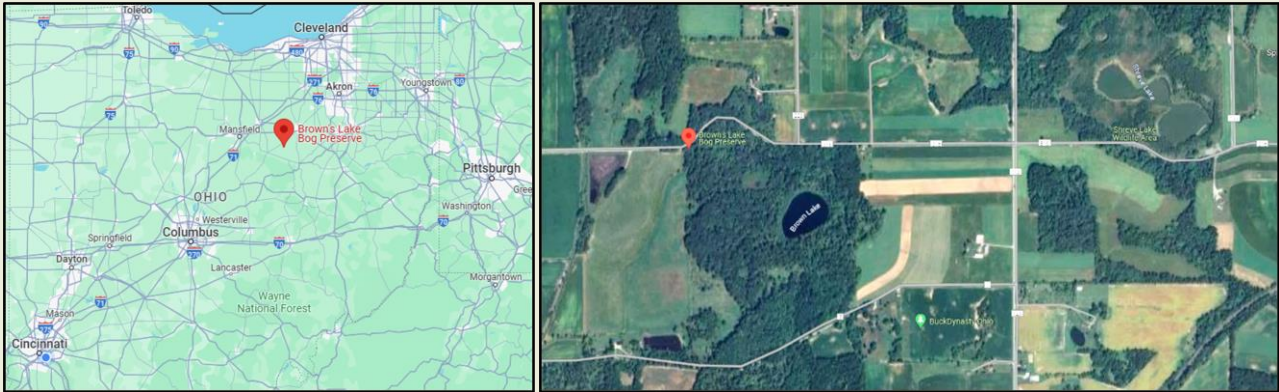
You do not need to be an Odonate expert, because many of the folks coming to your site *are* experts in the field (there are some *incredible* naturalists in the group). You do not, necessarily, need to come to the DSA meeting either; the meeting will come to you! If you cannot be there at all, that's OK too; just set up the field trip with all the details visitors will need for a first visit.

Plan for success. Pick site(s) for species variety. Rarity is also a consideration, but remember that out-of-state folks might be thrilled to see a Blue Dasher. Ideally, your hotspot would have restrooms or Porta-lets and parking for at least ten cars, but that is not necessary; just make note of facility details. Once you have selected the site, either fill out the OOS website on-line field trip form: <https://ohioodonatasociety.squarespace.com/dsa-fieldtrip-proposals> or send the following information to Dave at: mcshaffd@marietta.edu

1. Site name.
2. Accurate address for your meeting point.
3. Site photo(s) if you have them.
4. Site description including notable Odes, specific Ode spots and available facilities including restroom and parking information.
5. Meet date/time, expected duration, and contact information (if desired).

We will assemble the flyer. See example below.

Brown's Lake Bog Field Trip Flyer



Brown's Lake Bog is a small bog in Wayne County, Ohio. A Nature Conservancy site, [Brown's Lake Bog Preserve | The Nature Conservancy](#) is open to the public and has a boardwalk path from the small parking area on Brown Road (Highway 316). Collecting is not permitted. The boardwalk ends with an overview of the central pond and allows close inspection of the bog flora and fauna including Sundews and Pitcher plants. Notable odes include Aurora Damsel (*Chromagrion conditum*) and Sphagnum Sprite (*Nehalennia gracilis*). Although there is no specific address for this site, a map search for Brown's Lake Bog Preserve will bring up an accurate destination to initiate navigation. The site is adjacent to The Shreve Lake Wildlife Area with common species, the larger Kilbuck Marsh Wildlife Area and not far from the Mohican River and Mohican State Park. There are no restrooms at this site.

I'm Troy McClure, a member of the Ohio Odonata Society and a retired actor. I'll be at the site on Thursday, June 27th from 12-5 PM. You can contact me at TMCq325@gmail.com or on my cell at 740-555-5555 (cell reception is spotty at the site).

Ohio Odonata Web-site Update

Jay Heiser & Jim Lemon

OOS web-site history The Ohio Odonata Society (OOS) on-line history dates back to the mid-1990s with our first web site, hosted by Marietta College. In 2017, the OOS presence was moved to a site hosted by Ohio State University in support of the latest Ohio Dragonfly Survey. Although the OSU site remained accessible until recently, with the end of the official survey and funding, the OSU site wound down at the end of 2022. That site was never meant to be our permanent home, and it was incumbent on us to find a new host. The Board determined that, if practical, the OOS should have its own site with its own domain name (URL) that could serve the needs of the Society and the greater community, indefinitely. In the summer of 2023, Jim Lemon and Jay Heiser began a discussion on requirements and hosting options. After investigating several providers, they made a proposal to the board which was approved. During the last several months of 2023, they contracted for a site hosting service, developed a new site, filled it with material and announced the availability <https://ohiodonatasociety.org> on 15 January 2024.

Developers Both Ohio natives, Jim Lemon and Jay Heiser have been tinkering with web sites since the mid-1990s.

Jim Lemon grew up in Henry County along Turkeyfoot Creek, and has a Master of Science, Entomology, from The Ohio State University (OSU). He's retired from OSU, having worked in Information Systems for College of Food, Agriculture, and Environmental Sciences, OSU Extension, and the OSU Office of Research. Jim is the administrator of the Ohio Odonata Society (OOS) iNaturalist project Ohio Dragonfly Survey, and manages the Ohio

Dragonfly Survey Database. A former President and newsletter editor for the OOS, he helps monitor Odonata over much of western Ohio with organizations like Brukner Nature Center, Black Swamp Conservancy, and County Park systems (Darke, Miami, Montgomery).

Jay Heiser grew up in Bay Village Ohio, collecting butterflies and scooping racoon and fox poop at the Lake Erie Junior Nature and Science Center. He has a Masters of International Management degree and is recently retired after spending 19 years as an analyst at Gartner, providing advice on cybersecurity best practices.

Squarespace Decision The goal was to choose a hosting provider that would be relatively simple to update and administer, requiring a minimum of skill and time on the part of the OOS. Before looking at vendors, Jay put on his industry analyst hat and undertook a short survey of existing natural history web sites, especially at the US-state level. A lot of comparable organizations have hung their sign post out on the Internet, but when you open their door, there isn't much content inside. While there are likely multiple reasons for this, it seems that multiple natural history societies started down a path that was impractical for them to complete. The last thing Jay and Jim wanted to do was to install and administer the web server software—or any other software. They didn't want the OOS to pay a consultant to build a site, and then become dependent upon them indefinitely to update and administer the OOS site. They decided to choose a class of 'Software as a Service' offering called 'Website Builders' which are cloud-based services that, theoretically, don't require writing and maintaining code; the vendors manage the software, security, and backups. Customers use the vendor's templates and drag & drop interface to structure and publish their content. They looked at the top 3 vendors: Bluehost, Wix, and Squarespace,

all of which offered annual subscriptions that were within the Society's budget. They decided against WordPress, and after several weeks of experimentation, primarily in Squarespace, but also in Wix, they reached the following conclusions:

- Wix offered more functionality, but was more difficult to use than Squarespace.
- To fully understand the ramifications of either offering without spending weeks of time configuring it and implementing a representative set of our content within them would take more time.

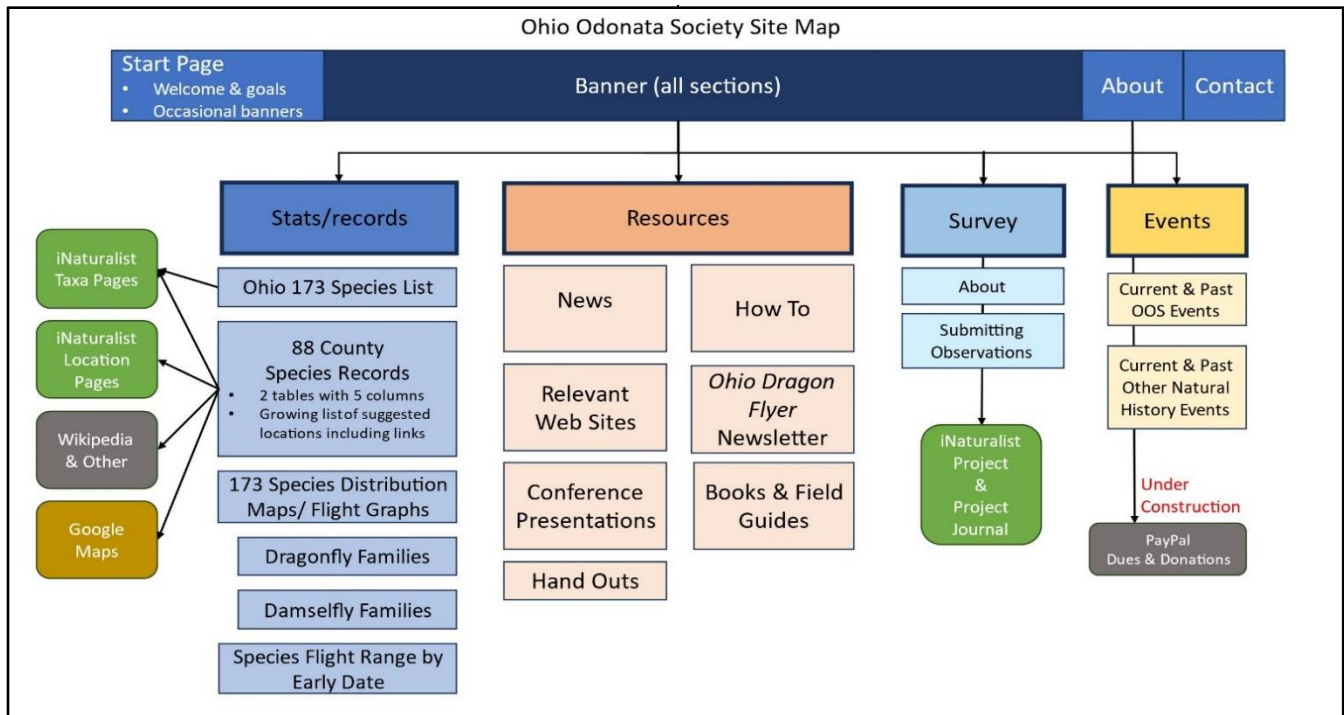
After 2 months of part time experimentation, they chose Squarespace to finish a prototype site, paying for it on a month-to-month basis while fleshing out most of the content within. Once they had the basic site complete and received the approval of the Board, they obtained our permanent domain name, ohiodonatasociety.org, and signed up for an annual site hosting subscription.

Collaboration Although they worked closely together, Jay and Jim separated duties. Jay became the primary webmaster, making decisions on the structure, layout, format, and color schemes of the new site. He functioned as the editor and publisher, copying over existing content primarily from the OSU website and creating a few new pages. Jim did the heavy data lifting, continuing his existing role as keeper of the data, generating up-to-date distribution/flight maps for each species and new tables for state records, county records and target species for each county.

Development hurdles The biggest challenge was coming up with a way to display tables, which feature prominently in our county and state statistic pages. As it turned out, Squarespace does not offer a native method of generating and formatting tables. Squarespace does provide a simple way to embed native HTML, offering Jim a solution to generate state and county records in tabular forms

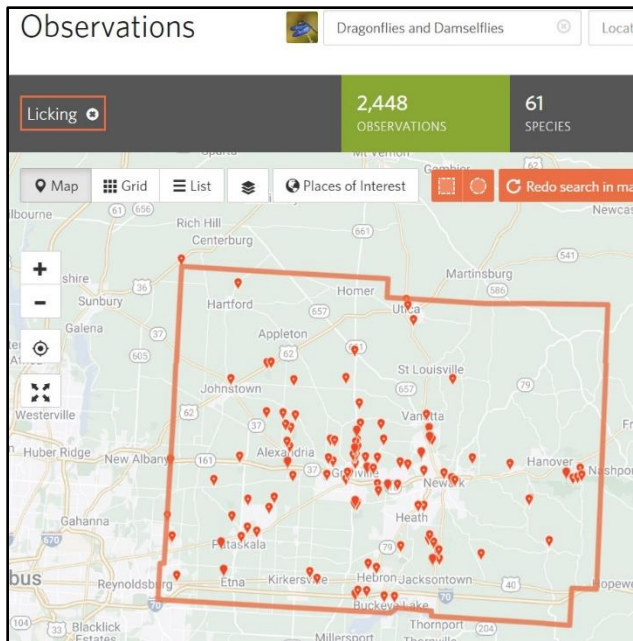
suitable for pasting into our site's pages. After a number of tables had been pasted in, it became apparent that many site users would want to sort those columns, so Jim developed some JScript code to the tables to enable that feature. Jim then added links from the species names back to the iNaturalist taxa pages, which required some reworking of the JScript sorting routines. Maps showing all the county names were part of the original plan for the county pages, but they were static graphics. The first two people to review the test version of our site in early January both requested the ability to link each of the 88 counties in the state map to the county pages, so they began experimenting with ways to make an interactive (clickable) map. After several other experiments with bitmaps, they found a reasonably-priced source for an Ohio county-level vector-graphic map. The vendor provides a web site that can be used to generate associated JScript code to color the counties and associate clicks with internal URLs. One advantage of Squarespace is that it is 'mobile friendly', recognizing when it is being accessed from a mobile phone, offering useful access in the field.

The current website format Jim and Jay desired intuitive site navigation, but did not want to spend time developing a custom menu system. Squarespace supports their intent to have a common banner at the top of all site pages with a set of topically-arranged pull down menus. With a few adjustments to the original site blueprint, they eventually settling on the layout as shown in the figure below, which has 4 main sections (Statistics, Resources, Ohio Odonata Survey and Events). Everything depicted in rectangles is content stored and served up through Squarespace. The shapes with the rounded corners are external websites that are linked to, and in one case, *embedded* into the OOS site.



Most of the content can be conceptualized as being ‘web pages’, HTML-based text and formatting instructions, along with some JScript—in other words, raw content that is served up to your web browser over HTTP. Your web browser does the actual page ‘formatting’, and column sorting for the tables on your PC as you view the content. The *Dragon Flyer* newsletter, handouts and most of the conference presentations are in PDF format which is a static format that was ‘formatted’ at its creation. PDF, viewable through your browser, has the further advantages that the individual files can be downloaded and saved separately and, in contrast to web pages, PDF files always print out cleanly as intended by the original creator. The downside of PDF is that the content is currently not searchable. A web server is a bag of content that is all linked together. You navigate it through pull down menus, underlined text, and buttons, all of them providing your browser with the URLs needed to access it. When you hover over a link, you’ll see the URL that will be used if you click on the link. Links can be ‘internal’ within the same ‘domain’, which is

ohioodonatasociety.org, or ‘external’ (in someone else’s domain). Your browser doesn’t care, and this offers the advantage of including services outside of Squarespace within the OOS website experience. The most significant use of this is access to both the iNaturalist species (‘taxa’) pages, and the iNaturalist location pages. The Ohio species page, and each of the 88 counties pages, has sortable tables of the species that have been found in those locations. The species names link back to the corresponding iNaturalist site, which provides information about that species and its distribution. The top of each county page has a link to an iNaturalist ‘place page’ for that county, which provides a map view with the county outlined and pins for all the publicly-viewable Odonate observations within the county (see Licking County map below). This is a good starting point if you want to search Odonata for a specific county. All county pages have a link to the Wikipedia page for the county and other pages that provide natural history context. A growing number of county pages have a list of suggested places to visit which link to relevant government and other external sites.



Future of the website All of the original goals for the site have been met. A single web server, under the control of the OOS, provides multiple views of the odonatan observational data, a home for the newsletter, and a place to share a growing body of material on our natural history category. Jay and Jim are always open to ideas. At this point, the only significant new capability they (along with Sheree and Chelsea) are evaluating, is a way to collect dues and donations online. They believe that PayPal will be an affordable and convenient way to do that, and it offers some additional potential for other membership features. If PayPal doesn't work out, or they decide to use some other service in the future, it would only require changing a link or two on the OOS website.

Several counties, such as Champaign and Coshocton, have recently been enhanced with Google maps showing some of the Odonata hotspots in the county. These maps are 'embedded', meaning that the content is actually external to the OOS webpage, but it functions as if it were a native part of the county page. There are no further technical challenges associated with this approach, and they have a written process for creating new

embeddable county maps. We just need people to create that content. More on that in future communications.

Remaining technical hurdles are in the area of search. Squarespace's internal search capability (the search window is located at the bottom of each page) has turned out to be relatively weak, and it is unable to support searches of PDF documents. Because Squarespace non-web files like our PDFs externally (they aren't linked through ohiodonatasociety.org), they are not searchable through Google, although they do seem to be searchable through Microsoft Bing. If necessary, it would be possible to pay for an additional hosting service specifically for document storage, search and retrieval that could be fully linked into our site, but it would exceed our current budget.

It is impossible to avoid observing that there are similar state-level natural history sites which are incomplete or inactive, as they don't have the time or money to complete or maintain them. Biological survey functions in several states are experimenting with a single platform hosting multiple natural history communities, without the necessity of them all being their own webmasters.

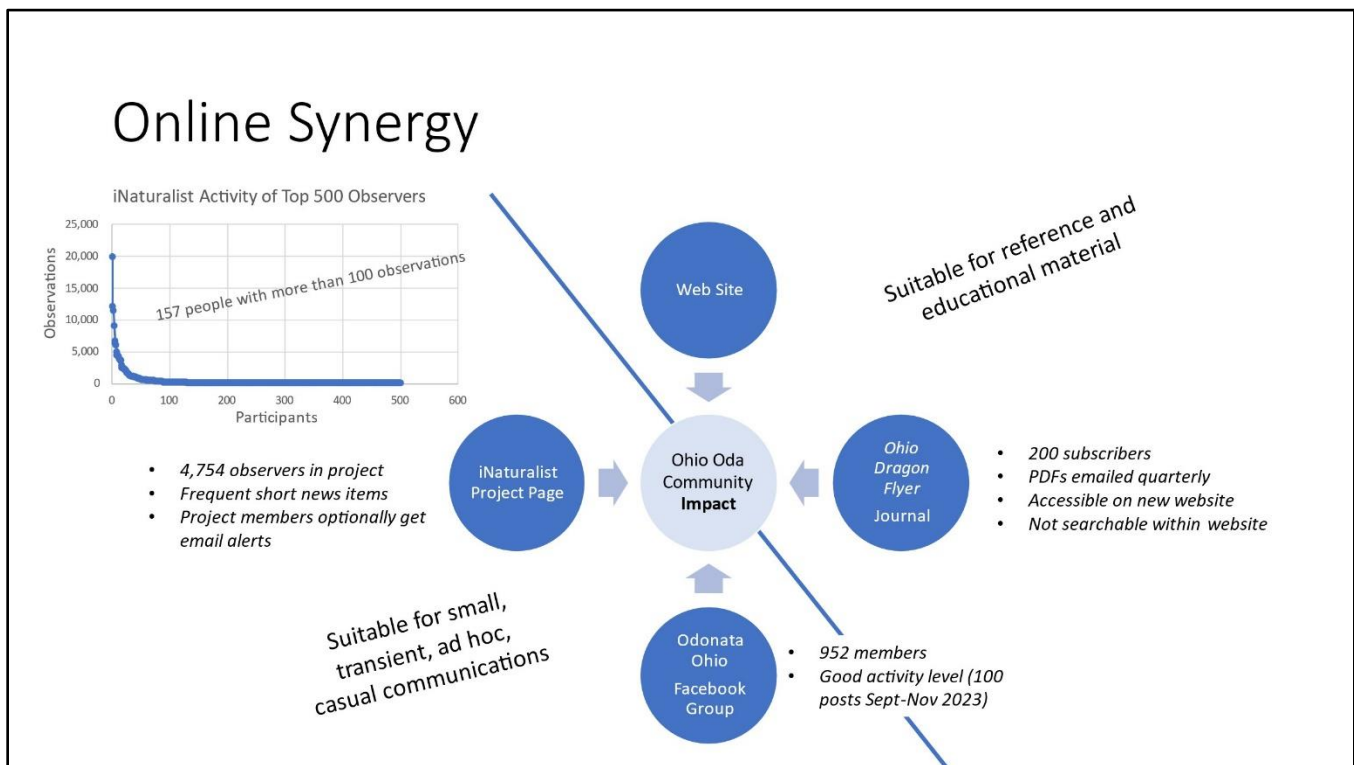
Membership participation The OOS website was intended as just one online destination in the greater community of people in Ohio interested in dragonflies and damselflies. This consists of several thousand people whose level of associated activity follows a Pareto distribution. In other words, most people have a casual level of interest in the topic, and a relatively small number of people have high levels of engagement. The new website is intended to support everyone, in synergy with existing communities in Facebook and iNaturalist Squarespace.

The primary areas for community participation remain the submission of observations to the iNaturalist project and ad hoc discussions and news

in the Odonata Ohio Facebook group. The newsletter, which hopefully will gain more attention now that current and back issues are conveniently accessible online, continues to be published quarterly, and it continues to need submissions of articles and photographs from the Ohio's Ode community. Our goal for the OOS website is to serve content that is not available from other sources.

The most significant category of Ohio-specific content that we would like to boost is the Places to Visit sections of our county pages. Similar to [eBird](#)

[Hotspots](#), we want to provide useful guidance on site visits. Ideally, all 88 county pages would include a list of Places to Visit, and an embedded Google map with a pin for every site. If you have a site you'd like to submit, there's a link in the contact section with a form that makes it easy: <https://ohioodonatasociety.squarespace.com/hotspot-suggestion>



Costs Unlike most Squarespace websites used for commercial purposes, Jay and Jim created the OOS presence without paying for consultants, software or accessory services. The current Squarespace cost to the OOS membership is \$276 annually, with an additional annual fee of \$20 to maintain our domain name – affordable for an organization of our size. The small cost associated with the use of PayPal will more than pay for itself. Other than volunteer time, there are no additional costs associated with operation of the site. Squarespace has its quirks, but

we anticipate that it will remain our home. If a move were to become necessary to a different hosting provider, it would be a straightforward process to move the domain name. The flight maps and tables created by Jim are completely portable, and could be easily reused. Links to other sites, such as iNaturalist, Google Maps and Facebook, would also remain consistent after a site migration.

Editor's note. We were incredibly fortunate that Jim and Jay were willing to invest their considerable technical expertise and time in this project.

Some Like It Hot: Temperature Regulation in Dragonflies

David Goldstein

The body processes of Odonates, like those of other animals, are temperature-sensitive. That includes internal functions like digestion, muscular efficiency, neural processing and more observable traits like wing-beat frequency, effectiveness at prey capture, and even color in some species. Because of that, many animals, including Odonates, regulate their body temperature (T_b) within a rather narrow range, at least while they are active.

Most animals, including almost all invertebrates and most vertebrates, other than birds and mammals, are ectotherms (“cold-blooded”). Their rates of energy metabolism (heat production) are too slow to affect T_b , which, instead, is determined by external factors.



Ashy Clubtail (*Phanogomphus lividus*) in obelisk.

Ectothermic dragonflies can be adept at regulating T_b , but they must do so behaviorally. The primary mechanism is through site selection – either more or less access to warm substrates or solar radiation. In summer, when the problem is to avoid overheating, many dragonfly species employ the obelisk posture; the abdomen is pointed upward

toward the sun, thereby minimizing the surface area intercepting solar radiation and also, potentially, casting a shadow over the head and thorax.

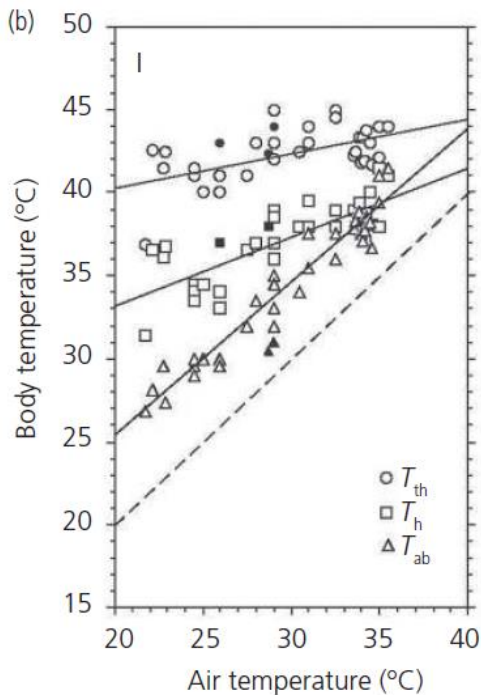
Additional options become available in flight. Even in ectotherms, the thoracic flight muscles generate some amount of heat during active flight, and so shifting between powered flight and gliding can modulate heat load.

In contrast, endothermic (“warm-blooded”) animals have rates of metabolism high enough to generate heat that raises body temperature along the lines of a car’s engine warming up. Endothermy has the advantage of allowing an animal to maintain a stable, warm body temperature across a broader range of environments, especially in cool weather. But it does cost the animal more energy and therefore requires more food intake. Endothermy thus requires the ability to produce and retain sufficient heat.

For the most part, insects lack endothermic features. First, their rates of metabolism are relatively low. And, second, they are small, which makes it hard to retain heat (higher ratio of surface area to mass). However, over the past 50 years, researchers have discovered endothermy in a number of insects. For the most part, those insects are relatively large and stout bodied, fly actively and have furry bodies that insulate against heat loss. Bumblebees and sphinx moths exemplify the type.

Dragonflies would seem poorly suited for endothermy. They are long and skinny, a terrible morphology for heat retention. They generally lack furry coats. Still, though, some of them are relatively large, at least for insects. Also, the seemingly non-stop flying of some species suggests an active metabolism. Perhaps it should not be surprising, then, that some dragonflies are indeed endothermic.

Endothermic dragonflies can use all the strategies of ectothermic species, but they have two additional capabilities. First, endothermic dragonflies can generate enough body heat while perched in the shade to elevate thoracic temperature. They do that by “wing whirring”—rapid, non-locomotory contractions of the thoracic flight muscles, equivalent to shivering. Second, endothermic species can control the flow of hemolymph (“blood”) from thorax to abdomen. The abdomen is not itself very metabolically active, but it can be effective at radiating excess heat.



May, M. L. 1995. Simultaneous control of head and thoracic temperature by the Common Green Darner (*Anax junius*). *J. Exp. Biol.* 198: 2373–2384.

Relatively few studies of dragonfly thermal biology have been published. It does appear, though, that what is regulated in both ectothermic and endothermic species is the temperature of the thorax (T_{th}), where the flight muscles both generate heat and are sensitive to temperature. In addition, the temperature of the head may be controlled,

potentially at a temperature different from the thorax. Presumably this would support stable neural function in these highly visual predators.

Temperature regulation by warm-season species

Twelve-spotted Skimmers (*Libellula pulchella*) are ectothermic, despite their relatively large size. Adult 12-spots were found to have optimal thoracic temperatures (producing the greatest vertical force during flight) of about 43.6° C (that’s hot!), and thoracic temperatures measured in flight (41.3° C) were close to optimal over air temperatures ranging from about 15 to 32° C. Interestingly, teneral 12-spots have lower optimal temperatures (perhaps a remnant of their recent aquatic larval condition), and they fly with a lower T_{th} . Both adults and tenerals achieve their high body temperatures behaviorally, by basking, though vigorous flight does slightly augment T_{th} .

By comparison, Unicorn Clubtails (*Arigomphus villosipes*) measured immediately upon capture in the field had body temperatures similar to 12-spots (T_{th} between ~37 and 42° C, and head temperatures between 32 and 38° C, over an air temperature range of 20 – 35° C). However, those temperatures were achieved in part by endothermy, using wing-whirring to warm up before flight at cool temperatures. Once warm, though, much of their regulation was achieved by behavior, including adjustment of posture, wing position, and site selection.

Temperature regulation at seasonal extremes

In Ohio, dragonfly season is marked by predictable early and late species. Green Darners (*Anax junius*), migrate north to Dayton as early as the first week of March. Autumn Meadowhawks (*Sympetrum vicinum*) typically close the season down well into late November. At both ends, dragonflies are likely to encounter cool weather. Interestingly, though, the two species meet that challenge using different strategies.



Green Darner (*Anax junius*).

Green Darners are capable of endothermy; they can warm to about 35° C while resting in 20° C air temperature, and in flight they maintain nearly constant T_{th} , just above 40° C, across a wide range of air temperatures. Green Darners fly more rapidly and steadily at lower temperatures to generate heat, allowing flight in air that's 10° C or cooler.



Autumn Meadowhawk (*Sympetrum vicinum*).

In contrast, Autumn Meadowhawks are ectotherms. They can achieve thoracic temperatures significantly above ambient air temperature using behavioral means, especially by choice of perching site and substrate. Indeed, the genus name "Sympetrum" means "with rock" and apparently derives from their habit of basking on rocks in the morning.

Like Green Darners, Autumn Meadowhawks can fly at air temperatures down to about 10° C. However, they do so with significantly lower T_{th} than in

darners, and their real "superpower" is having body functions (e.g., muscle contraction and digestion) adapted to perform well at low body temperatures.

Emerging patterns The generalization that emerged from studies like these is that "perchers" (like many species in the families Libellulidae and Gomphidae) are likely to be ectotherms, whereas "fliers" (more active species, typical of families like Aeshnidae and Corduliidae) may well use endothermy.

The genus *Sympetrum* provides an interesting case study. The Common Darter (*Sympetrum striolatum*), is a north-temperature European species that flies in cool weather similar to Autumn Meadowhawks (*Sympetrum vicinum*). As described above, *S. vicinum* is ectothermic and uses behavior and cold tolerance to remain active into late fall. In contrast, *S. striolatum* is endothermic and can raise T_b by wing-whirring. Researchers of this species concluded, "The combination of ecto and endothermic thermoregulation is considered the main key factor for this species exceptionally effective adaptation to cold." Whereas *S. vicinum* is a pretty typical "percher," *S. striolatum* has prolonged bouts of flight during territorial defense, bouts of swarm feeding, and occasional trans-oceanic migration. So, apparently, divergent use of endothermy may occur even within a single genus, associated with lifestyle differences. We have migratory *Sympetrum* dragonflies in Ohio; Variegated Meadowhawk (*Sympetrum corruptum*) can show up in early spring. Other *Sympetrum* species peak activity earlier in summer than *S. vicinum*, such as Band-winged Meadowhawk (*Sympetrum semicinctorum*). The thermal biology of those species has not been studied.

The upshot of all this is that body temperature regulation is undoubtedly critical for dragonflies. However, even basic data like body temperatures at various times and conditions are few and far between and are unstudied for most species. In the face of continuing climate change, it is quite possible that issues related to temperature regulation play an important role in defining

temporal and spatial ranges of dragonflies, including, for example, northward expansion into Ohio of species like Great Blue Skimmer (*Libellula vibrans*) Slaty Skimmer (*Libellula incesta*), and Carolina Saddlebags (*Tramea Carolina*). Much remains to be learned!!

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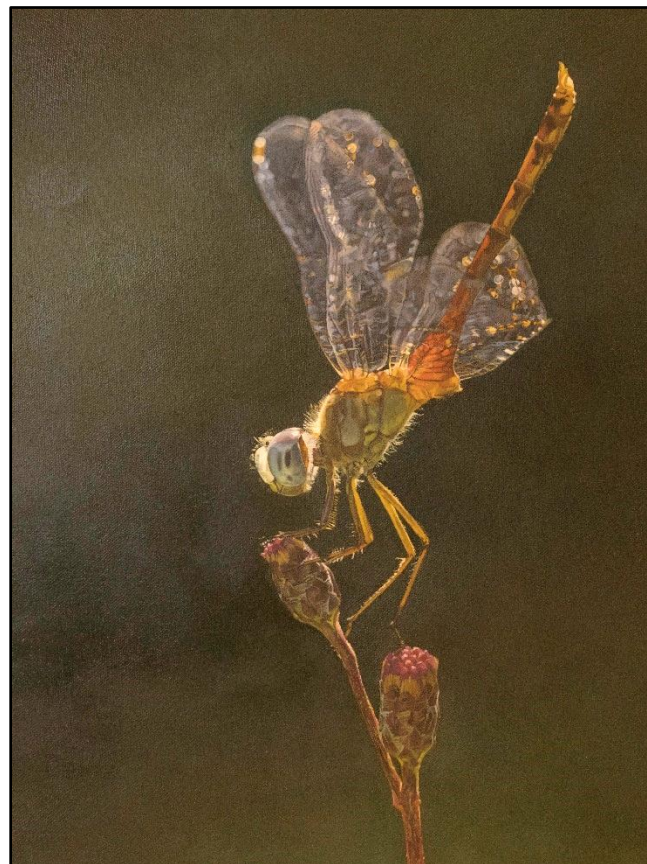
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Odonata in Art

Matt Lundberg



Blue-faced Meadowhawk (*Sympetrum ambiguum*)
Tall Ironweed (*Vernonia gigantea*).
Oil on canvas. Matt Lundberg. 2024.

Dragonfly Society of the Americas 2024 Meeting

Dave McShaffrey

The 2024 DSA meeting will be held in Marietta, Ohio June 28-30th 2024.

Registration details to be announced here: <https://www.dragonflysocietyamericas.org/en/meetings>

How did we end up in Ohio? Well, in 2001, Jen Wykle contacted me asking for help on assembling a dragonfly list for West Virginia. Bob Glotzhober and I were able to connect her with others such as Nick Donnelly and she soon had a rudimentary but dated list. The idea came up to have a DSA meeting in West Virginia and this took place in 2002. As part of the after-meeting trips, the group came to Williamstown WV, across the river from Marietta, to board USFWS craft to go out to one of the Ohio River Islands National Wildlife Refuge islands, and I pointed out Marietta to Jerrell Daigle. He asked me if there was a good Mexican Restaurant there. I said yes, and ever since he has been hounding me to have a meeting here.

For a long time, I resisted the idea simply because I could not see the attraction of Marietta in terms of the odonate fauna. Why would anyone come here to see all this common stuff? My thinking on this changed in 2018 when the Ohio Odonata Society invited Kurt Mead to keynote our annual meeting. On one of our field trips, Kurt called me over with some excitement – “Dave, is this what I think it is?” I confirmed that it was, in fact, *Ischnura posita*, and Kurt had a lifer. This was a paradigm change for me; Fragile Forktails are officially our 4th most commonly observed species and, given their size and secretive ways, are probably the most abundant species in the state. A lifer for someone three states away, and at that a someone who is a pretty darn good Odontologist and author of a great field guide. At the 2018 meeting in Minnesota Jarrell brought it up again and I said yes; plans were made for 2021 after Oklahoma. Then Covid, and here we are.

Marietta – the Odes

Washington County, Ohio, (Marietta is the County seat) has 62 species

https://www.inaturalist.org/observations?captive=any&place_id=1697&project_id=9978&verifiable=any&view=species

98 species are located in roughly a 40-mile radius from Marietta

https://www.inaturalist.org/observations?lat=39.47697354283054&lng=-81.45734027803965&place_id=any&radius=84.13721559886031&subview=table&taxon_id=47792&view=species&iconic_taxa=Insecta

Narrowing the search to June, there are 73 species

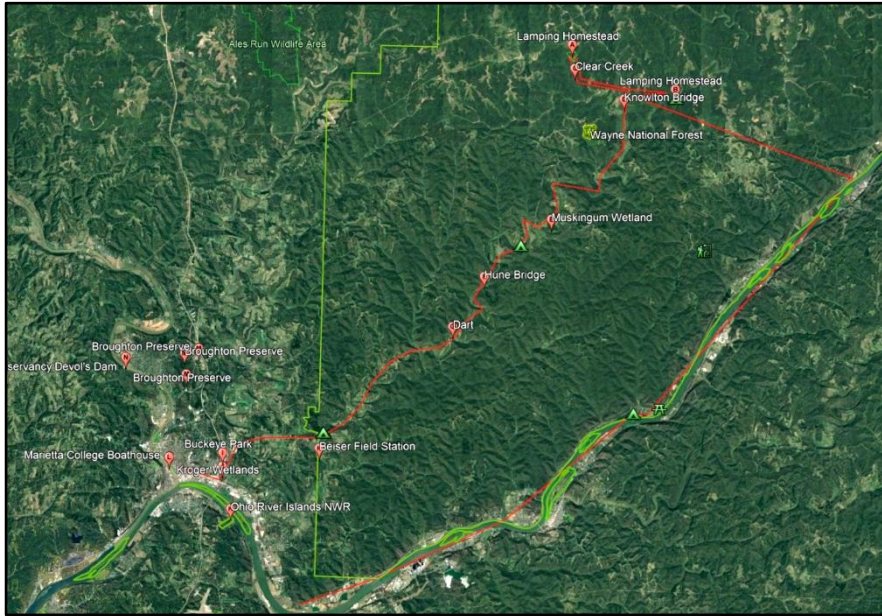
https://www.inaturalist.org/observations?lat=39.47697354283054&lng=-81.45734027803965&month=6&place_id=any&radius=84.13721559886031&subview=table&taxon_id=47792&view=species&iconic_taxa=Insecta

The meeting will be in late June; at this time some of my favorite species which should be found include *Phanogomphus exilis*, ***Arigomphus villosipes***, ***Libellula incesta***, ***Dromogomphus spinosus***, ***Leucorrhinia intacta***, ***Progomphus obscurus***, ***Hetaerina americana***, ***Celithemis fasciata***, ***Anax longipes***, ***Macromia illinoiensis***, ***Hagenius brevistylus***, *Gomphurus fraternus*, *Epiaeschna heros*, *Phanogomphus lividus*, *Ladona deplanata*, *Nehalennia irene*, *Cordulegaster obliqua*, ***Didymops transvera***, *Gomphurus vastus*, *Nehalennia gracilis*, *Rhionaeschna mutata*, and ***Stylogomphus albistylus***.

These are listed from most to least abundant in the listing; species in bold can be expected to be seen on one of the main field trip locations, the Little Muskingum River (and adjacent ponds/wetlands).

Marietta Field Trips

Marietta sits at the confluence of 2 rivers – the Muskingum and the Ohio. Several other rivers are in the vicinity. Given the unglaciated topography of the Appalachian Plateau, there are no large lentic bodies of water within the county. Although there are several small reservoirs, numerous “farm ponds” and a number of water bodies left behind by strip mining.



The main field trip for the meeting is (as the *Pantala* flies), roughly, a 60-mile loop up the valley of the Little Muskingum River. The river has the distinction of being the largest river in Ohio not to pass through a major town (though residents of Dart might disagree). Good water quality, but a bit too much silt. There are 5 very wadable sites on this loop, 3 of these are at USFS campsites, one is a local park, and one is a township road ford. There are also 2 good lentic sites (also USFS) and our college field station with 1200' of river frontage (but poor access) and several miles of mowed trails (upon

which a diversity of odes has been found). There are also two lentic sites at city parks at the very beginning. One option on this loop is to return via the Ohio River where there are several access points. There is also an isolated wildlife pond (USFS) and a number of smaller streams on USFS property. Many of the sites can hold up to 15 people at a time (some more, some less). By staggering start times and directions, it is possible for 50-60 people to be doing this loop simultaneously. Be aware that June is the height of the tick season in the region.



Little Muskingum River @ Hune Bridge



Little Muskingum River @ Hune Bridge

Within Marietta itself is a river trail which runs along Duck Creek, the Ohio River and the Muskingum River (the latter on both sides). There is considerable river access along the trail, but the water isn't wadable at most of them. We also have access to the College Boat dock on the west side of the Muskingum.



Duck Creek



Little Muskingum River@ Knowlton

Just outside of town is the extensive Broughton Nature Preserve with hiking trails along a small woodland stream and 3 ponds, one of which is an isolated woodland pond. Upstream of Marietta on the Muskingum River is Devol's Dam; access on the east side is at a state park, on the west side the Lower Muskingum Conservancy has river access to an extensive gravel bank. Further upstream at Luke Chute the Conservancy also has property and a nearby landowner will likely give access to his waterfront, which is also wadable. USFWS will also help with access to an island in the Ohio River.



Muskingum River @ Lake Chute



Muskingum River@ Devol's Dam

Additional trips would work north along Duck Creek which has one excellent wadable site and access at another ford, as well as 2 lakes in Noble County and a wildlife area created from an old strip mine there. Another northern trip would be to Noble/Muskingum/Morgan counties where extensive strip mines left behind many ponds, some of which have good diversity. The Wilds, a conservation park that is part of the Columbus Zoo, has

over 140 such ponds alone. I have been doing work there for 30 years and have had access to the “back country”; I’m hoping to get that permission (and the assistance of the staff) to allow a field trip to that property. Jesse Owens State Park is located on another portion of those same strip-mined lands and has numerous accessible ponds as well.

To the west of the county there are a number of small sites that can be combined into a good trip as well; so, we could have a trip to the east, 2 to the north, and one to the west occurring simultaneously.

Marietta – The Venue

The Ohio Odonata Society formed about 20 years ago as an outgrowth of a 1990-2000 state survey and, thus, has been in existence in one form or the other for about 30 years. It has an annual meeting – this year coinciding with the DSA Meeting, which draws from 20-100 individuals.

A newly launched website: <https://www.ohioodonatasociety.org/> is a great resource. There is a very active (940 member) Facebook group (<https://www.facebook.com/groups/odonataohio>) and over 4,000 people have contributed to our iNaturalist project: (<https://www.inaturalist.org/projects/ohio-dragonfly-survey-ohio-odonata-survey> Note: we “pull” in all Odonata observations from Ohio, so these 4K people have not all purposely contributed). The group has been actively discussing the meeting for several years and is excited to finally host it.

Located in Marietta, Ohio, at the confluence of the Muskingum and Ohio rivers, Marietta College is a four-year liberal arts college. Tracing its roots to the Muskingum Academy, which was founded in 1797, the College was officially chartered in 1835. Today, Marietta College serves a body of 1,200 full-time students. The College offers over 40 majors and is consistently ranked among the top regional comprehensive colleges by U.S. News & World Report and The Princeton Review. Marietta was selected seventh in the nation according to the Brookings Institution’s rankings of colleges by their highest value added, regardless of major. We will have the meetings in the McDonough Auditorium with comfortable seating and full A/V services.



Dorm at Marietta College



McDonough auditorium

Housing

Rooms in the dorms will be available for about \$50/person per night, BYOB bedding & towels. These are newer dorms with either two beds in a single room (shared bathrooms) or quads with 4 rooms sharing a single bathroom and living space. Air conditioned, Wi-Fi.

There are at least 10 hotels in Marietta ranging from 5 to 100+ rooms; overall there are hundreds of rooms. Many are near the interstate and cater to passing travelers so someone making reservations in advance should have no trouble booking a room. In addition, there are a number of bed-and-breakfasts in town. Hotels range from the 5-room Hackett Hotel (a local gem 2 blocks from campus) to the 100+ year old Lafayette Hotel on the Ohio River within walking distance of campus. There are also several new chain hotels near the interstate about 2 miles from campus.

Food

Attendees – staying in the dorms or not – may be able to eat in the dining hall on campus for a fixed rate per meal depending on whether there are enough people staying on campus to justify keeping the dining hall open. Tim Horton's is across the street from the dorms and a McDonalds and Subway a 5-minute walk away. There are MANY restaurants in the area including Asian Fusion, Indian, Chinese, etc. There are also small "hometown" style restaurants and a local brewpub. There are 2 chain Mexican restaurants and one good family owned one. There are chain restaurants of all types. Most of these are within walking distance of the college. We encourage participants to strike out on their own or in small groups to explore at mealtimes although we will try to have some kind of picnic or river cruise dinner for interested parties Saturday night.

Destination Meeting

This meeting has the added attraction of possibly being a "destination meeting" which would accommodate participants wanting to bring families along. Marietta is a very historic city (David McCullough researched his book *"The Pioneers"* here (and much of it is set in Marietta) and has 2 larger museums and several restored houses. There is an aquatic center, miles of mountain-bike trails, a skate park, an excellent riverside walking trail, numerous small shops including many antique stores, a great cooking store, a farmers' market Saturday morning on the edge of campus, historic cemeteries (supposedly more Revolutionary War officers are buried in the vicinity than anywhere else in the country), native American earthworks, kayak and bike rentals, manually operated locks and dams on the Muskingum River that are approaching 200 years old; a restored steam sternwheeler, a nearby island where Aaron Burr hatched his conspiracy (reachable by sternwheeler), and regular scheduled cruises on a sternwheeler in Marietta, lots of hiking trails, etc. It will overdose a history buff and there is enough to entertain younger kids through teenagers (just kidding, nothing will do that). The Wilds, a 10,000+ acre conservation park with more than 25 species <https://www.thewilds.org/animals> is about 45 minutes away. There's also a lot of fishing. Much of this is in walking distance of the campus (not so much some of the hotels, although even the ones by the interstate can be reached via the bike/pedestrian trail along the river). There is even a Walmart, and a decent hospital if anyone pushes things a bit too far.