

Dragonfly ID from Friends of the Rouge and Wayne County Stream Monitoring Program  
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Friends of the Rouge (FOTR), along with the Wayne County Department of Public Services, have been performing stream monitoring of benthic macroinvertebrates over twenty years and currently follow the Michigan Clean Water Corps (MiCorps) protocol, set by the state to collect reliable, high-quality data (learn more at <https://micorps.net/>).

Aquatic invertebrates are collected in spring and fall at designated survey sites throughout the watershed each year, and specimens are identified to taxonomic family level. Since different families of aquatic invertebrates have various water quality requirements and sensitivities, this monitoring provides insights into river system health and changes.

Fortunately, the specimens are preserved in alcohol for potential future review. This is where we, as managers of the Michigan Odonata Survey (MOS), come in. The goal of the MOS project is to document all the species of Odonata (dragonflies and damselflies) in Michigan by county, based on voucher specimens; the current Michigan list stands at 170 species. The project began in 1996 with a compilation of vouchers from major university collections. We have been involved with MOS for over 20 years, took over the project in 2018, and have recently been working on locating and collecting data on nymphs and exuviae (the shed exoskeletons of odonates left behind as they transition from aquatic nymph to flying adults). While adult odonates may range far from water, nymphs and exuviae are found where they breed, important for determining habitat requirements.

We extensively surveyed adult Odonata in Wayne County, including the Rouge and Huron River watersheds, from 2000-2012. Our detailed results, noting 90 species in the county, was published in a peer-reviewed journal in 2013\*. However, given the large number of samples gathered in varying habitats by the FOTR and Wayne County surveys, we suspected it was possible to find uncommon species in the samples, perhaps even a few undocumented species.

In 2023, we examined several scores of FOTR and Wayne County vials from Wayne, Washtenaw, and Oakland counties for Odonata nymphs to identify. The oldest samples were from 2001 and the most recent were from fall 2023. We primarily focused on dragonflies, but also examined some of the smaller and harder-to-identify damselflies. Even so, some dragonfly nymphs were too immature to identify to species. Most of the vials were from the Rouge River watershed, but sites also included Swan Creek, Bradshaw Drain, Desbrow Drain and the Detroit River. The Bradshaw and Desbrow Drains are Swan Creek tributaries.

Opening each vial was similar to opening a gift and not knowing what surprise may be included. We looked at 408 nymphs, generating 249 records, with each record representing a unique taxa (but possibly multiple individuals) at a particular location. Of those 249 records, 238 were identified to species, nine only to genus, and two just to family. Of the species identified, there were two 1<sup>st</sup> county records and one 2<sup>nd</sup> county record. The first county records were in Washtenaw and Wayne counties, bringing the total number of species in these counties to 120 and 92, respectively.

Significant records included:

- Laura's Clubtail (*Stylurus laurae*): 1<sup>st</sup> and 2<sup>nd</sup> county records for Wayne County. This is a state Species of Special Concern. and was found in the Bradshaw Drain, located in the southwest portion of Wayne County.



Laura's Clubtail Adult



Laura's Clubtail Nymph

- Arrowhead Spiketail (*Cordulegaster obliqua*): an uncommon species found in wooded, high quality streams. Found at four sites with most individuals collected in the northwest portion of Wayne County in Johnson Creek and the Lower Rouge.



Arrowhead Spiketail emerging adult



Arrowhead Spiketail adult

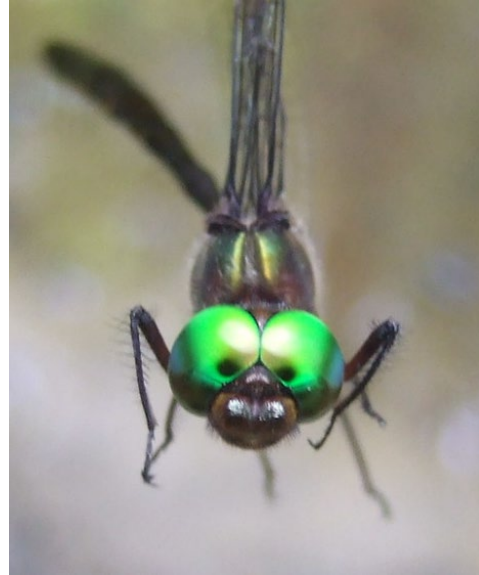


Arrowhead Spiketail Nymph

- Mocha Emerald (*Somatochlora linearis*): 1<sup>st</sup> county record for Washtenaw County. We had previously recorded this species from four Wayne County sites. The 2023 FOTR/Wayne County specimen review found 32 individuals amongst 12 additional Wayne County sites, all scattered in the western half of the county. This species is found in the same habitat as Arrowhead Spiketail, but also in a variety of higher quality streams and agricultural ditches, especially if wooded buffer areas exist. They were found in tributaries to the Middle and Lower Rouge as well as Swan Creek, Desbrow and Bradshaw Drains.



Mocha Emerald adult



Mocha Emerald adult



Mocha Emerald Nymph

The Odonata identification exercise was a success given the number of significant finds in the FOTR/Wayne County collections. We hope to continue collaboration with FOTR and Wayne County by reviewing future samples. No doubt there are more discoveries to be made.

You can learn more about the Michigan Odonata Survey at our website *michodonata.org*. Our blog Urban Dragon Hunters ([urbanodes.blogspot.com](http://urbanodes.blogspot.com)) describes our broader work with insects, especially Odonata and often in Wayne County, and includes a page of links of our published work.

\*Craves, J.A., and D.S. O'Brien. 2013. The Odonata of Wayne County, Michigan: Inspiration for renewed monitoring of urban areas. *Northeastern Naturalist* 20:341-362. PDF available at <http://tinyurl.com/54nmus95>