

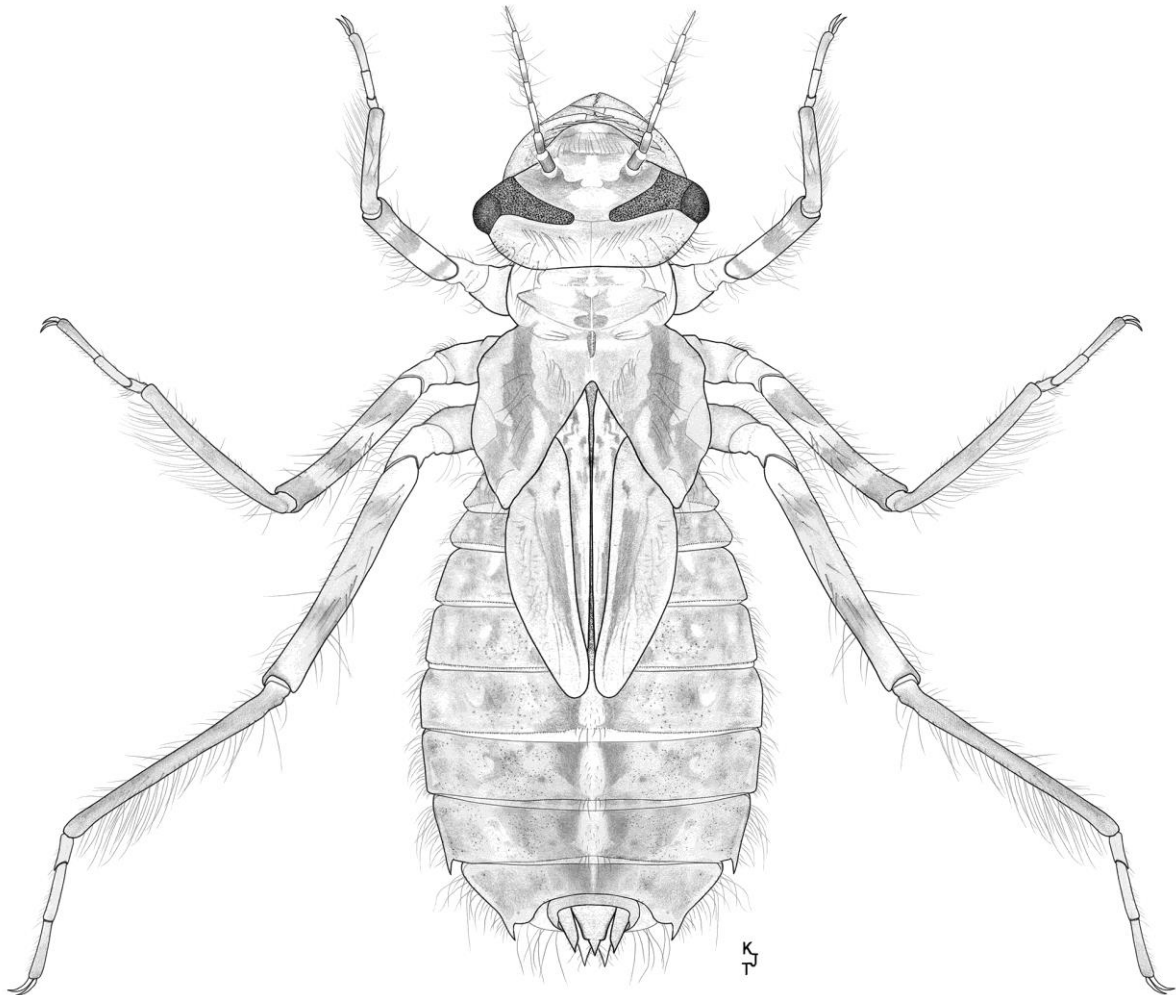
Newsletter of the Wisconsin Dragonfly Society

Wisconsin Odonata News



Vol.6 Issue 1

Spring, 2018



Fostering the appreciation, study and enjoyment of Wisconsin's dragonflies and damselflies and the aquatic habitats on which they depend.



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Cover image: American Emerald (*Cordulia shurtleffi*) nymph
By Ken Tennessen

Banner photo (left) American Rubyspot
Banner photo (middle) River Jewelwing
Banner photo (right) Orange Bluets

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Greetings! As we are looking forward to the spring and getting outside looking for odes, I would like to give you an update about what your board of directors has been working on. I am excited to report that 2018 looks to be a big year for the Wisconsin Dragonfly Society. We had a very productive winter meeting and made progress on some items that we have been discussing for quite some time.

We're excited to announce that Jeff Fischer has agreed to join our board. Jeff has generously offered his time and expertise to create a website for the Wisconsin Dragonfly Society, which we look forward to launching in the coming months. We'd like to extend a big thank you to our friends Mark Donnelly and Veta Bonnewell from Illinois for joining us at our winter brainstorming session and for bringing their valuable ideas and technical expertise to the table. We're very excited about being able to offer all of you a fantastic website to visit, to share, and from which to learn about the Odonata of Wisconsin.

Another exciting development is that our application to become an official 501(c)(3) non-profit organization is well underway, so stay tuned for an announcement. We are indebted to Joanne Kline for her leadership in getting us to the final stage in the process. Thank you to all the members of this society who responded to the vote on the amendment of our mission statement. Your 'yes' has enabled us meet the qualification requirements for the application. Once our application is approved, the WDS will have the legal status to accept donations that are tax deductible. Now you will be wondering what we would do with more money. Well, I will tell you!

We have formed a dedicated education committee with Jenn Callaghan leading the way. We have purchased some nets and loupes to use for educational purposes and are in the process of putting together kits that we can provide to people doing presentations. This supports our vision to support education and outreach across the state. Any donations you make will help us get more nets and other items to make kits to build this program. Additionally, the donations received will enable the sponsorship of relevant research and the development of naturalist programs that will grow our base of trained volunteers and data collectors.

In summary, I really feel that 2018 is poised to be the year of the Dragonfly! Your board of directors is aligned, engaged, and I feel we are really hitting our stride as we move toward a sustainable long-term structure for the WDS. I would like to thank all of our board members; their effort and ideas have carried us forward. Please take the time to thank them when you see them, they deserve it!

Ryan J. Chrouser

President

What's Up Under Ice and Snow?

Ken Tennesen and Robert DuBois

Burrowing under a blanket in your recliner, a cup of hot cocoa, or tea or coffee in hand, maybe listening to your favorite music, do you ever think about how dragonflies make it through these winter days? How does a *Cordulia shurtleffi* (American Emerald) nymph (see the accompanying drawing) make it till next spring? Having spent many years studying all stages of Odonata, we wonder a lot and would like to share some thoughts. After the survivable days for dragonflies are over in late fall, when the little red flashes of the last Autumn Meadowhawk (*Sympetrum vicinum*) adults have disappeared, somehow all the species that are resident in Wisconsin face, in some stage, the freezing days and nights of four or more onerous months. Dragonflies are “out there” in the raw elements constantly, either as nymphs or eggs, surviving whatever bitter cold temperatures and short days nature imposes. Obviously, right? or we wouldn't see those beloved adults flying the next warm season (well, there are some migrants that would show up, but we're talking about resident species, ones that breed here year after year). We are making an inference here, as not many people churn up the ice to find the nymphs, although Burt Cebulski (2009) came up with a method for doing so. And Ami Thompson and her stalwart colleagues at the University of Minnesota have been cutting holes in ice in surrounding lakes, with a chain saw(!), to net nymphs of the Common Green Darner (*Anax junius*) for a life history study.



Photo by Scott Dodds, courtesy of Ami Thomson

When venturing out in below zero wind chills, it's wise to take heed of the warnings about frostbite. Being warm-blooded, we have tender skin and need to cover it. But dragonflies are ectotherms, and have evolved other ways of avoiding being frozen. Through a combination of behavioral and physiological strategies (that term sounds anthropomorphic, but it is used in ecological circles), dragonflies have found ways, in both the egg and nymph stages, to withstand extreme winter conditions of long duration. The following discussion is summarized mostly from Corbet (1999), with some of our own observations and thoughts interwoven.

Overwintering as Eggs

Spending winter in the egg stage is the less common of two overwintering strategies used by odonates in Wisconsin, but well-known species of Meadowhawks (*Sympetrum*), Mosaic Darners (*Aeshna*), and Pond Spreadwings (*Lestes*) employ it. These species fly late in the season during autumn, and lay eggs into plant material (living or dead) and even on the ground. Overwintering eggs typically have thicker, more protective outer membranes (the vitelline membrane) than eggs that develop directly.

Overwintering eggs quickly attain an advanced stage of embryonic development then pass the winter in diapause during which they can survive very cold temperatures, including being frozen in ice for several months. Because embryonic development can occur at temperatures lower than newly hatched nymphs could survive, development is arrested until a requisite hatching temperature threshold is reached in the spring. To prevent eggs from hatching prematurely during warm periods in autumn there is a complex interplay between water temperature and the duration of physiological stages depending on whether eggs are in prediapause, diapause or postdiapause stages. When water temperatures begin to rise in early spring, eggs enter the final stage of development which synchronizes hatching. Wetting of eggs must occur for completion of embryogenesis, so a species like the Spotted Spreadwing (*Lestes congener*), that lays eggs in dry stems above water, needs the stems to fall and be wetted by snowmelt in the spring. Although overwintering eggs are very resistant to low temperatures, an insulating blanket of snow can aid survival.

Some species of Striped Emeralds (*Somatochlora*), Meadowhawks, and Pond Spreadwings are known to lay both eggs that diapause and eggs that do not, with the proportion of diapause eggs increasing as the season advances. This

flexible approach enables early hatching nymphs to benefit from the good growing conditions associated with high water temperatures, and it prevents eggs from hatching too late in autumn when small nymphs would be at the mercy of low temperatures and a host of predators. Some Darners (Aeshnidae) and Emeralds (Corduliidae) that have an overwintering, diapause egg stage also have late-instar nymphs that overwinter as well. So, if nymphs that hatch in late fall are susceptible to extreme cold, a species having eggs that overwinter instead of early instars is a pretty “smart” survival strategy. Moreover, the overwintering egg strategy of these species facilitates the use of temporary water bodies that dry up in fall, their eggs being uniquely well-protected from drying.

Overwintering as Nymphs

All Wisconsin resident species of Odonata that don’t overwinter as eggs must do so as nymphs, and they are the majority. Little is known about the behaviors and physiology of overwintering, but it is likely that nymphs reduce or entirely suspend their activity – little to no feeding or even moving – during the winter months. At the extreme end of this spectrum, some of our species, including *Coenagrion resolutum* (Taiga Bluet) and *Enallagma boreale* (Boreal Bluet) spend their winter embedded in ice! Philip Corbet (1999) wryly noted that this allowed them to “enjoy” four or five months free from exposure to predators. Talk about living in a glass house! When the ice melts, nymphs resume activity promptly and evidently have normal survival rates. Whether embedded in ice or not, reduced activity probably lessens their exposure to predators during winter. In fact, several studies have shown that of the entire developmental periods of the nymphs, survival is often greatest in winter. However, this isn’t to say there aren’t risks. Anoxic conditions under ice in shallow, well-vegetated ponds could be lethal, and species near the northern limits of their ranges probably don’t fare well during very severe winters. And then there’s the boredom... oh the boredom... but with the hope of better days to come! For a poetic glance on the subject, see WON vol.1, issue 1, p. 10 (Feb. 2013).

([http://wiatri.net/inventory/odonata/WDS/Newsletters/New sletter_2013-02Feb.pdf](http://wiatri.net/inventory/odonata/WDS/Newsletters/New%20sletter_2013-02Feb.pdf))



In conclusion, the winter landscape looks barren and inhospitable at a glance, but below the surface there are many fascinating concepts involved with the overwintering strategies of odonate nymphs. Do they all survive? A good guess would be probably not. Selection leads to adaptation through generations, a process in which certain individuals do not live to breeding age. Extreme environmental conditions are but one obstacle dragonflies face. The fossil record indicates that hundreds of millions of years ago dragonflies originated in a tropical environment and through the eons adapted to cooler climes. Certainly, dragonflies have overcome changing environments including heat and cold, ice advancement and retreat, drought and flooding, and new predators and parasites. And they are still with us, even in the far north. While many species of odonates are unable to adapt to cold climates and thus are unable to overwinter in Wisconsin, some species are so specialized that they are limited to regions in which the winters are extremely cold. This latter group includes many species of *Aeshna*, *Somatochlora* and *Leucorrhinia* (Whitefaces) that are particularly limited in their geographic ranges. On the other hand, some species have populations that can survive in very warm conditions and very cold conditions, and as a consequence their geographic ranges are huge. For example, some such species are *Anax junius*, *Hagenius brevistylus* (Dragonhunter), and *Sympetrum vicinum* (Autumn Meadowhawk). Why some species can adapt to widely varying conditions and others cannot is a subject that deserves further attention.

References:

Cebulski, B. C. 2009. Collecting odonates under the ice. *Argia* 21(3):8–9

Corbet P. S. 1999. *Dragonflies: Behavior and Ecology of Odonata*. Cornell University Press, Ithaca. 829 pp.

Bottom left: Shallow stream through jagged ice
Bottom right: Ice dragonfly



History of the Wisconsin Dragonfly Society

Robert DuBois, Ryan Chrouser and Freda van den Broek

During the late 1990s, the few professionals who worked with odonates in Wisconsin increasingly began to realize that a great deal of help would be needed to adequately survey the entire state to learn about the distributions and important habitats of all of the species of dragonflies and damselflies (Odonata) that called Wisconsin home. The state was simply too big and held far too many types of aquatic habitats to be adequately surveyed by just a couple of people! We thought a citizen-based monitoring (CBM) program could be used to acquire data collected by many interested non-professionals that would help improve scientific knowledge about our odonates, and we began to plan the inception of such a program. In about 2000, William A. Smith, a WDNR zoologist with much interest in odonates, and Robert DuBois, a WDNR research scientist with a similar interest, initiated a pilot Odonata survey program in the northwestern counties of the state. The program, which we called the Wisconsin Odonata Survey (WOS), grew incrementally into a statewide survey with a website roll-out in 2002 (<http://wiatri.net/inventory/odonata/>).

Since its inception, educational talks and field outings have been a focus for promoting and growing WOS, and it has certainly been a successful program. From 2002 through 2017, 171 people made more than 5,400 site visits that have resulted in more than 30,000 new Odonata records from around the state, including many first records for all 72 counties and a handful of new state records as well. More than 5,000 records were submitted in both 2016 and 2017. This wealth of data has led to much greater understanding of the ranges and important habitats of all species in the state, including rare species. Also of great importance, their involvement with WOS has been a pathway for many people to become more deeply and meaningfully engaged with nature.

Despite the initial success of WOS, some short-comings with the program became evident over time. Recruitment and retention of volunteer cooperators were continual challenges. The program was rather loosely organized and relied on highly motivated cooperators to survey habitats near where they lived, often alone, and with little training or guidance. Opportunities to train new cooperators were sought, and some progress was made, but the logistical difficulties associated with trying to offer training programs

throughout a large state were substantial.

In 2012, the leaders of WOS founded the Wisconsin Dragonfly Society (WDS) as an extension of the existing survey and as a means for giving more structure and organization to citizen science activities involving odonates in Wisconsin. A board of directors and officers was established to oversee the WDS and bylaws were assembled. The office of president was filled by Robert DuBois in 2012 – 2013, Dan Jackson in 2014 - 2015, and Ryan Chrouser from 2016 – present.

The mission of the WDS is to “*foster appreciation, study and enjoyment of Wisconsin dragonflies and damselflies and the aquatic habitats on which they depend*.” Our goal is to be the complete source for information about the odonates of Wisconsin and to provide the citizens of this state with the educational tools they need to enjoy and ensure a brighter future for this resource. We seek to emphasize outreaches to youth and to the minority groups that have sometimes been overlooked by natural resource agencies, as evidenced by our partnership with the Urban Ecology Center in Milwaukee. And, the formation of the WDS has clearly boosted the effectiveness of WOS as evidenced by the steady increase in the number of locations surveyed since 2012 (Figure 1).

The WDS produces an occasional newsletter called the Wisconsin Odonata News (WON), which was first created and edited by Ellen Dettwiler and is now produced and edited by Freda van den Broek. We also host an active Facebook group page <http://www.facebook.com/groups/wisconsinragonflysociety/> that has over 1,000 members. This Facebook page has provided a pleasant forum of social interaction for members, who freely share their photographs and their favorite locations for observing odonates. It has also become a tremendous venue for people to hone their identification skills. Members are encouraged to attempt to identify the images of species they post, and they can count on receiving gentle and thoughtful feedback from others. Identification tips for the most challenging species groups are frequently posted. Those who have taken advantage of the learning opportunities afforded by the Facebook page have quickly advanced in their understanding of odonate identification, life history and behavior, and in improving their techniques for photographing them.

Annual meetings in summer are held at different locations around the state and have become an enjoyable way for members to get to know and learn from each other. These meetings provide a forum for discussing the business of the society and are an outlet for having fun chasing and photographing odonates, and for developing and improving identification skills together. Annual meeting dates and locations have been:

- 13-14 July 2012, Horicon Marsh International Education Center, Dodge County
- 7-9 June 2013, University of Wisconsin – Waukesha field station, Waterville, Waukesha County
- 14-15 June 2014, Rusk County Community Library, Ladysmith, (in conjunction with the 2014 Dragonfly Society of the Americas [DSA] annual meeting)
- 11-12 July 2015, The Ridges Sanctuary, Door County
- 25-26 June 2016, Castle Mound Campground, Black River Falls, Jackson County
- 14-16 July 2017, Forest Beach Migratory Preserve, Ozaukee County
- 15-17 June 2018, Beaver Creek Nature Center, Fall Creek, Eau Claire County

The WOS website provides information about all the species of odonates in the state, gives guidance on how to survey for them, and provides a reporting page for citizen scientists to record their observations. In 2013 the website received an overhaul to become better integrated with the new Wisconsin Dragonfly Society, and in 2018, the WDS rolled out its own website with links to the WOS website (address to be announced in May). The WDS is also in the process of applying for non-profit status.

The WDS has made strong strides since its inception to increase knowledge about dragonflies in Wisconsin and to provide a captivating, informative, and convenient avenue for people to enjoy them. Why don't you come along and join us!



2017 Annual Meeting at Forest Beach Migratory Preserve

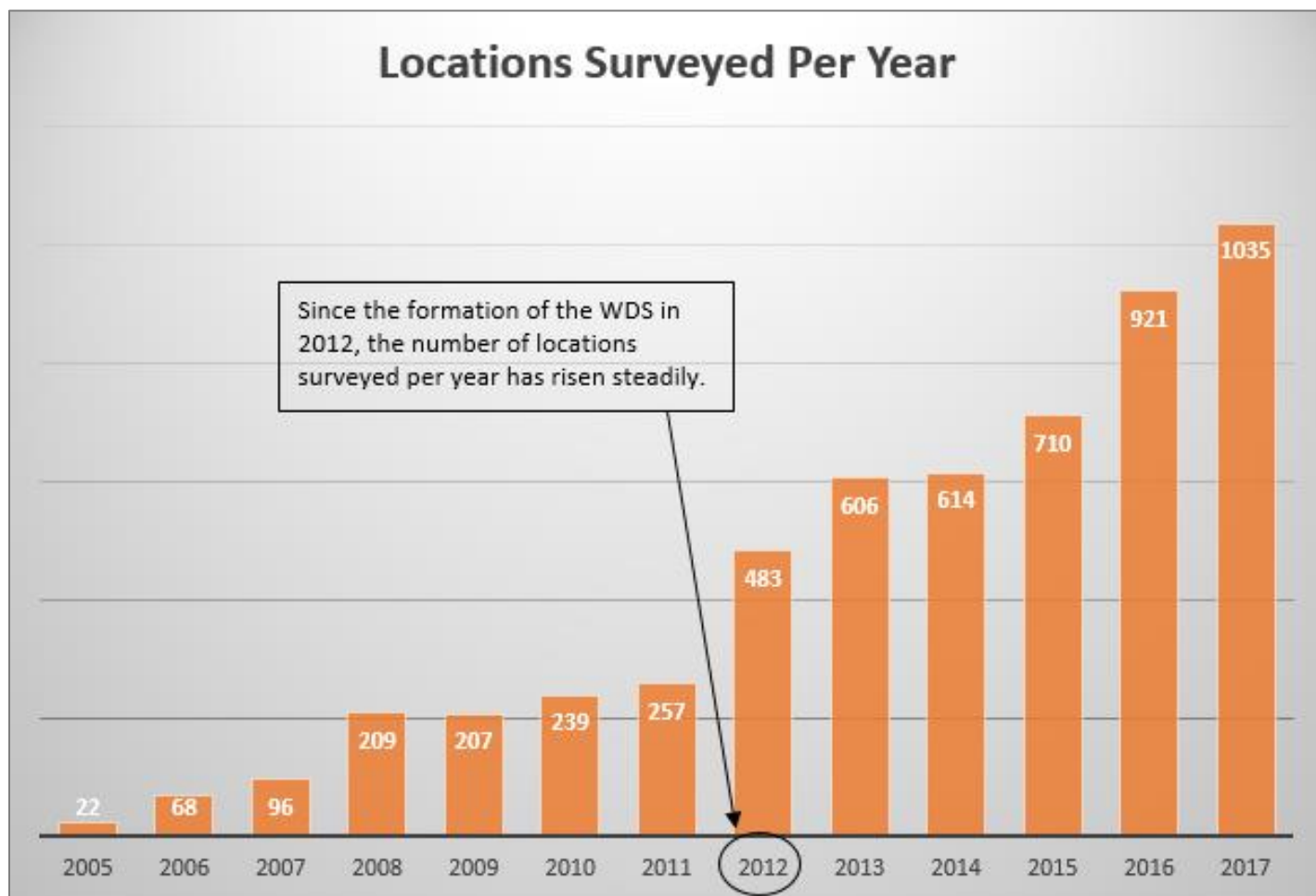


Figure 1

Riparian Habitat

Ryan Chrouser

A fascinating aspect of odonate ecology is how species connect to specific habitats and with other species. Take the commonly related story that starts with two identical ponds. Fish introduced to one may completely alter the types of species present in that pond. Interconnectedness of ecosystems is complex, and a myriad of factors influence how they may change over time.

I find river and stream habitats, or riparian habitats, to be particularly fascinating. From the rain that falls in the uplands and the springs that well from the ground, our riparian systems are born. Small trickles feed brooks, which flow into creeks, and then in turn into small rivers. These small rivers coalesce into larger rivers that wind for long distances to the sea. I wade in the creek in my backyard nearly every day in the summer and often ponder how the water flowing around my ankles will one day be flowing into the Gulf of Mexico. The journey of flowing water over the Earth is a defining characteristic of our planet.

Riparian systems create an incredible diversity of habitats for species. Various factors influence the species composition in a stream, and they are not always apparent to our more limited senses. The natural factors to consider include substrate, flow rate, aquatic vegetation, temperature, sediment load, and surrounding habitat and land vegetation. Human factors also have an effect on the system, often in profound ways. Pollution, bank erosion, dams, and upstream land management are all going to influence the species that are found in a riparian habitat.

Not only are the habitats diverse, they are also dynamic. Change can happen rapidly and the species must be able to adapt to these changes for short periods until the normal state of the system returns. Consider a massive rain event; I will again use my local creek as an example. After several inches of rainfall within a few hours, I have observed Otter Creek in Eau Claire County rise by more than 8 feet. This creek does have a moderate to fast flow normally, but at the deepest near my house it is about 4 feet with an average depth of about 2 feet. I marvel that the Ebony Jewelwing (*Calopteryx maculata*) and Fawn Darner (*Boyeria vinosa*) nymphs that I commonly find in the creek manage to persist during major events. Major events that result in rapid water level and flow increases can also cause permanent changes to a riparian system. They will erode parts of the bank and deposit sediment in other areas. Parts of the creek become deeper and sometimes I get a new sand bar. In extreme cases, parts of the stream habitat will be completely altered and the species composition could change correspondingly.

A variety of Odonata have evolved to take advantage of the various habitat types found in streams. Many of the Wisconsin families have species that prefer moving water environments. Some of these species are generalists that can use a variety of riparian habitats like the Shadow Darner (*Aeshna umbrosa*) and Midland Clubtail (*Gomphurus fraternus*). As a result, they are common and widespread in Wisconsin. Some taxa are more particular regarding the habitat that the nymphs need in order to successfully complete their life cycle. The Snaketails (*Ophiogomphus* sp.) in general need clear water with a moderate to fast flow, so they are often found in the same habitats that support trout. Whatever the niche of a particular species may be, river systems provide a variety of microhabitats for us to try to find them.

Harstad County Park in Eau Claire County is an example of a site that provides a variety of microhabitats in a small space. Harstad Park occurs at a juncture of three different habitat types. At this location, Horse Creek flows into the Eau Claire River. The river is relatively wider, deeper, and slower flowing before it's the confluence with Horse Creek. After the confluence, it becomes very rocky and shallow. Horse Creek itself has a silt/sand substrate with many log falls and some rocky perches and ledges. The creek widens from 20 to nearly 30 feet in the last stretch before it joins the river.



Figure 1 - Inside the blue box is the small area that I have surveyed.

The bend in the river immediately before the junction with Horse Creek contains a slow moving backwater area that provides habitat for several species of odonates that are more commonly associated with ponds. Skimmers and damselflies of the genus *Enallagma* are found here mixed with some more common river species. Beyond the mouth of the creek, the shallower rocky riffles support Black-shouldered Spinylegs (*Dromogomphus spinosus*), Rusty Snaketails (*Ophiogomphus rupinsulensis*), and several other river clubtails. I have observed Common Sanddragons (*Progomphus obscurus*) and Sioux Snaketails (*Ophiogomphus smithi*) in the latter part of Horse Creek near the mouth. Moving upstream in Horse Creek you can commonly find Fawn and Shadow Darners and two species of late season clubtails of the genus *Stylurus* (Zebra Clubtail – *Stylurus scudderi* and Arrow Clubtail – *Stylurus spiniceps*). All told, I have tallied 42 species at this location, and all of them in just a small area surveyed on foot.

With this example in mind, consider that one part of a stream may be very different from another part of the same stream only a short distance away. If there is a target species you have not found at a particular river or creek, it does not mean that they are not present in the stream. I would suggest that you survey at multiple locations upstream and downstream when attempting to discover a species that has some more specific habitat requirements. When you do find a species known to have a narrow habitat range, your observations may be scientifically important. Reporting the find and the habitat may help dial in our next generation of field guides to a more exact habitat type.



Riparian habitat (Bark River in Dane county) where the high water mark is visible on the tree trunks

We are excited to share the following Pre-publication Announcement

By Ken Tennesen

A new book, *The Dragonfly Nymphs of North America: An Identification Guide* by Ken Tennesen is nearing completion. The inspiration for this book began over 30 years ago. Needless to say, preparation has been slow. A nymph anatomy chapter, fully illustrated, orients the user to the special terminology used in identification. Dichotomous keys for identifying to family, genus, and species are amply illustrated. The illustrations (mostly original drawings with a few photographs) total over 1,600. Geographic ranges are given, with an overall map for each genus, and notes on habitat and life cycle are included. Methods for studying nymphs are detailed, and opportunities for future research are discussed. The publisher is Springer; the deadline for the completed manuscript is May 31, 2018. After that date, the publisher will need to review and format the book; therefore, the actual publication date is still unknown. Stay tuned for updates.

Note on the author: Ken started studying dragonflies in 1967.



Ken at Lake Twelve during the 2017 Annual Meeting at Forest Beach
Migratory Preserve.

Boghaunters

Kate Redmond

Boghaunters are in the dragonfly family Corduliidae, the Emeralds (also known, confusingly, as Green-eyed Skimmers), a group of medium-to-largish, sometimes-metallically-colored, startlingly-green-eyed dragonflies that fly fast and acrobatically and don't perch much. Boghaunters are none of these things.

Along with the boghaunters, the family is represented in Wisconsin by emeralds, baskettails, and shadowdragons. There are two species of boghaunters, Ringed and Ebony, both in the genus *Williamsonia*, a genus that was first described in 1913, named after Michigan bank president Edward Williamson, who was also an internationally renowned dragonfly expert (and iris breeder).

These are rare and reclusive dragonflies whose biographies are not completely written. Both species have early flight periods, their habitat requirements are similar, and they don't stray far from the pools they emerge from. As their name suggests, they prefer fishless bog pools, quaking bogs, and acid fens with sphagnum moss and sedges (but with surrounding woods for adult activities), although in the eastern part of its range, the Ringed Boghaunter is associated with cedar/spruce/tamarack bogs. Both are absent from lots of apparently suitable habitat.

Courtship activity isn't well-known. Adults are found patrolling bog pools (they are weak fliers), hunting in nearby woods, sunning themselves near the ground, or hanging on tree trunks. Eggs are deposited in open water (Ringed) or in wet sphagnum moss (Ebony), and the small, smooth naiads (<http://michodonata.org/MOL/WILLIAMS.htm>) grow and then overwinter as naiads. In spring, they climb a short way out of the water and emerge as adults. It wasn't until well into the twentieth century that naiads and exuvia were described and matched with adults (the late 1960's for the Ringed and the early 1990's for the Ebony Boghaunter).

Although Ebony Boghaunter populations are on slightly steadier ground, both are considered vulnerable in Wisconsin, and the Ringed Boghaunter is listed as globally vulnerable. Both are threatened by destruction or fragmentation of the naiads' and the adults' habitat, by sphagnum harvesting, pesticides, pollution, collecting, cranberry farming, and fluctuating water levels. Sparse distribution, low populations, and sedentary habits mean that a few years of bad weather could wipe out local populations.

Ringed Boghaunter

Karl Legler, in *Dragonflies of Wisconsin*, describes the Ringed

Boghaunter as "*Small. Dark. Conspicuous orange-brown rings around each abdominal segment. Face orange-brown. Eyes gray to blue-green.*"

Ringed Boghaunters (*Williamsonia lintneri*) are primarily a New England species whose populations in Wisconsin and Michigan are considered outliers and whose New York population may have been extirpated. According to the International Union for Conservation of Nature (IUCN) Redlist, they occur in 54 counties in eight states, and where they do occur, they occur in small numbers, with no more than 50 adults at a site. A paper by White and Raff in the journal *Psyche* in 1970 describing the naiad did not list Wisconsin as part of their range, but a photograph by the Leglers confirmed their presence here in 1998. Ringed Boghaunters have been reported from six Wisconsin counties, mainly in the west-central part of the state.

White and Raff quote comments made by R. Heber Howe in 1923, "*The dates, as will be seen, range from April to June 4 and undoubtedly [sic] the reason Williamsonia lintneri has been overlooked is because of its early flight season when collectors are not alive to the presence of Odonata in the field. I always find it a woodland species inhabiting the neighborhood of cold bogs and brook runs. Its larva is unknown.*"

The article continues, "*In the early 1930's Dr. James G. Needham of Cornell University offered five dollars and a copy of his book (Needham and Heywood 1929) to anyone at Harvard University who could produce a nymph of Williamsonia. Apparently the prospect of wading in cold bogs in the early spring searching for an unknown nymph was not worth the reward even during the Depression, for the search was never made.*"

Ebony Boghaunter

Ebony Boghaunters (*Williamsonia fletcheri*) are also ringed, but the two (male) or three (female) rings are white, and they only occur near the base of an otherwise dark abdomen. Females have gray eyes, but the male's pale green eyes brighten with age.

They're found along the northern tier of states from New England through Wisconsin, and in Canada from Nova Scotia to Saskatchewan; one source said that from the Atlantic coast through Wisconsin, they occur in only 84 widely-separated sites - in some cases, in only a few locations per state - and it is suspected that their numbers are declining. Ebony Boghaunters are listed as "critically imperiled," "imperiled,"

or “vulnerable” across their range. They’re known from about two dozen counties in northern and west-central Wisconsin.

Their flight season is short (mid-May through mid-June), and it starts and ends a little later than the Ringed Boghaunter’s. Ebony Boghaunters may oviposit in clumps of wet sphagnum moss, and it’s speculated that the naiads may mature there rather than in open water.

Photo by Ken Tennesen



Figure 1 Ebony Boghaunter (*Williamsonia fletcheri*) male

Photo by Ken Tennesen



Figure 2 Ringed Boghaunter (*Williamsonia lintneri*) male

<http://explorer.natureserve.org/servlet/NatureServe?searchName=Williamsonia+fletcheri>

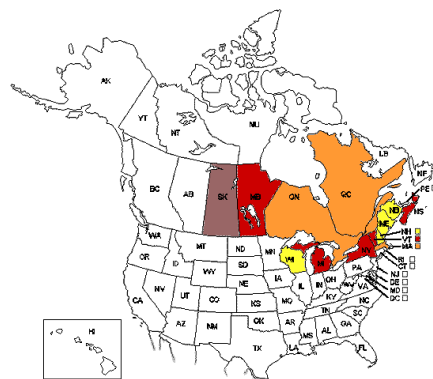


Figure 3 Distribution of Ebony Boghaunter (*Williamsonia fletcheri*)
Brown – not ranked, red critically imperiled, orange imperiled, yellow vulnerable.

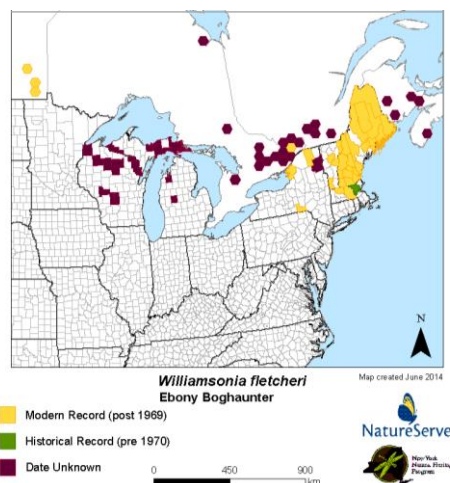


Figure 4 Pre- and post- 1970 Distributions of Ebony Boghaunter (*W. fletcheri*)

<http://explorer.natureserve.org/servlet/NatureServe?searchName=Williamsonia+lintneri>

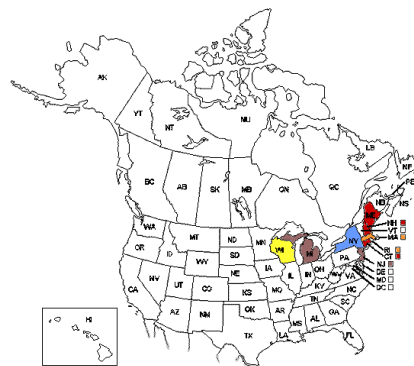


Figure 5 Distribution of Ringed Boghaunter (*Williamsonia lintneri*)
WI vulnerable, MI&NJ not ranked, NY possibly extirpated, WE&NH&CT critically imperiled, MA imperiled.

Spotlight on Bob Jacobson

Ryan Chrouser

Our new Spotlight feature aims to give recognition and thanks to some of the members of the Wisconsin Dragonfly Society who have made outstanding contributions to the Wisconsin Odonata Survey. For our inaugural Spotlight feature, I sat down with Bob Jacobson from Bloomer in Chippewa County. Bob was a very active contributor to the WOS in 2017, adding more than 400 observation records in Chippewa County alone. I had a script of questions, which we eventually answered, but our conversation was as much about philosophy as it was about Dragonflies. Of course, everything circled back to the Odonata.

Ryan: Can you tell me a little bit about your background?

Bob: Science was a very important part of my childhood. I was never much into sports and spent much of my time examining the world around me. My parents were very encouraging regarding my interests. I went on to get a degree in Biology and had a career in Quality Control for a food company. Professional responsibilities did not allow much time for hobbies. I retired in 2015, and was given a camera as a gift. I became interested in macro photography, and insects were great subjects. A picture of a stunning dragonfly that I was trying to identify brought me to the WOS and Facebook group and I was soon engrossed in the world of dragonflies. The summer of 2017, I spent a good deal of time photographing and learning about the Odonata. At the end of the year, I fashioned a homemade net and began to study odonates in hand. In addition to dragonflies, I enjoy woodworking, fishing and spending time with my kids and grandkids.

Ryan: Are you interested in any other citizen science initiatives?

Bob: I was an avid birdwatcher in my younger days, but nothing has really captured me like Odonata.

Ryan: Do you have a favorite dragonfly or damselfly, or maybe a few of them?

Bob: I was excited to get a good photo of Russet-tipped Clubtail above Jim Falls last year. In the same location, I was excited to find a Wandering Glider, which was very striking. Variegated Meadowhawks are also a favorite. Really though, I look forward to seeing the species that I have not found yet.

Ryan: What motivates you to learn about the Odonata and contribute to the WOS?

Bob: It seems that based on the species in Eau Claire County

and other surrounding counties, there is an opportunity to add some species and knowledge about those species in Chippewa County. Based on the quality of habitat, there are likely more species yet to find. I am excited to be able to add to the scientific knowledge in that way. I found that I liked getting good photos but really wanted to ID the species that I was seeing. This is why I made myself a net. I recognized the need to get some species in hand to get better at ID's and get accurate ID's and photos.

Ryan: Do you have any favorite locations?

Bob: The Chippewa River above Jim Falls has been an interesting and rewarding site. Another site I look forward to exploring more is near the Ice Age Trail in northern Chippewa County along County M. There are several small pothole ponds and other interesting habitats potentially in the area. Late in 2017, I started exploring a small creek on the north end of the Como Lake, which looked like it could be very interesting also.

Ryan: Do you have a most exciting find?

Bob: The Russet-tipped Clubtail that I mentioned earlier was exciting, but anything new is very exciting.

Ryan: What is the most rewarding part of surveying?

Bob: The element of surprise and excitement regarding what you might find, or when you see something in the field. It is also nice to be able to contribute to the scientific knowledge. Odonates are great indicator organisms, the data gathered now could be very important years later regarding habitat and climate change. The bottom line though, is that it is fun! That, in and of itself, makes it rewarding.

Ryan: How has surveying changed how you experience the outdoors?

Bob: Well, the best part is that it gets you outdoors. Last summer I probably used more sunscreen than in the rest of my life combined! I look forward to that time outdoors. It also seems to sharpen the powers of observation in general, you start to notice things that maybe you would have looked over before. Being outdoors is therapeutic as well. We are so fortunate to have the incredible natural areas in Wisconsin that we have. Many people take them for granted, but I think surveying really increases your appreciation of them.

Ryan: Do you have any advice for anyone looking to learn more or get involved with the survey?

Bob: I would tell them to join the Wisconsin Dragonfly Society

and get connected to the Facebook group. It is a supportive environment for learning. Invest in a couple of basic guides, and then get outside and see what you can find. Do not be afraid to get something wrong, if you make a mistake on an ID, the Facebook group can help you see what you missed and you can learn from it. Also, do not ever leave your camera at home when you go for a walk outdoors.

I want to thank Bob for taking the time to get together and chat with me. We ended up talking for almost three hours and I think we were both surprised at how similar our separate journeys into the world of Odonata have been. By the end of the conversation, we were both ready for the dragonflies to start flying!



Russet-tipped Clubtail (*Stylurus plagiatu*) by Bob Jacobson

ACKNOWLEDGEMENTS

Recognition for Outstanding Contribution to Wisconsin Odonatology

An award was presented to Dan Jackson, former President of the Wisconsin Dragonfly Society, in recognition of his outstanding contribution to Odonatology in Wisconsin, by Bob DuBois, Founder of the WDS, at the society's 2017 Annual Meeting at Forest Beach Migratory Preserve in Ozaukee County. Thank you, Dan!



Photo by Ann Hartinger Graf

Dan Jackson (left) holds up the award presented by Bob DuBois (right) on behalf of the Wisconsin Dragonfly Society.

Wisconsin Odonata Survey Contributors

Your data submissions are valuable!

With much appreciation and thanks to all who contributed to the WOS in 2017 (new contributors denoted with *):

Aaron Carlson; Alon Coppens; Andrew Badje*; Ann Graf; Beth Stetenfeld*; Bob Jacobson; Brian H. Weeden*; Carol Mankiewicz; Chris West; Cynthia Bridge*; Cynthia Donegan; Dan Jackson; Darleen Horman; Debra Rade; Douglas Hall; Edgar Spalding; Freda van den Broek; Gerald DeBoer; Herman Bender; Jason Nickels; Jay Watson*; Jennifer Callaghan; Jerry Ziegler; Jim Kinderman*; Joanne Kline; John Davis*; Joseph Sommerfeld; Kate Redmond; Katie Connolly; Kerstyn Perrett*; Kevin Brown; Krista Brookins*; Kurt Huebner; Larry Kapp*; Mary Mirasola*; Maureen Gross; Mike Reese; Patrick Heyn*; Paul Massey; Paul Schilke*; Robert DuBois; Roger Zimmermann; Ryan Brady; Ryan Chrouser; Scott Puchalski; Shaun Putz*; Tom Wright*; Valerie Burns; Willson Gaul; Zac Driscoll*

Thanks to “Bob (the Dragonfly Guy) DuBois”

The Brule River Preservation, Inc. requested that their thanks be expressed to ‘the esteemed Bob DuBois’ for his presentation on “Our Amazing Dragonflies and Damselflies” to their group in June last year. The \$500 honorarium was donated to the Wisconsin Dragonfly Society at Bob’s request. (See <http://bruleriverpreservation.org/>)

Critically Imperiled Spatterdock Darner (*Rhionaeschna mutata*) Observed at Forest Beach Migratory Preserve for the Third Consecutive Year

Freda van den Broek

While it would require some knowledge of the Odonata of Wisconsin to know, at the sight of a Spatterdock Darner, that one was seeing a “Very Rare” dragonfly (Legler, 2013); it wouldn’t take more than an appreciative eye to know that the dragonfly in question was something special. At 3 inches in length, the average Spatterdock Darner (*Rhionaeschna mutata*) may be roughly equivalent in size to the most commonly seen large dragonfly at the pond, the Common Green Darner (*Anax junius*). However, its bright blue eyes, its black and blue body, and its breathtaking agility, make it easily distinguishable from most other dragonflies. That is, except for the Blue-eyed Darner (*Rhionaeschna multicolor*), the only other member of the *Rhionaeschna* genus that has ever been recorded in Wisconsin.

It generally requires hand-examination to distinguish the Spatterdock Darner from the Blue-eyed Darner as the key physical differences (body length and clasper shape) are very subtle. When the Spatterdock Darner was photographed at Forest Beach Migratory Preserve in 2015, Robert DuBois of the Wisconsin DNR and founder of the Wisconsin Dragonfly Society tentatively confirmed its identity on the basis of an in-flight photograph. It was accepted as the first record of this species for Ozaukee County; and one of only a handful of records for all of Wisconsin. Any lingering doubt was laid to rest in 2016 when a large darner with characteristic blue eyes was netted at Forest Beach Migratory Preserve, physically examined by Robert DuBois and Ken Tennessen, and confirmed to be *R. mutata*. At present, the Spatterdock Darner has S1 conservation status in Wisconsin, meaning that it is “critically imperiled” due to a “very restricted range, very few populations or occurrences, very steep declines, severe threats or other factors.”

(<http://dnr.wi.gov/topic/NHI/WList.html#SRank>)

DuBois and others documented the historical records for the Spatterdock and Blue-eyed Darners in Minnesota and Wisconsin and their overlapping ranges in an article published in ARGIA (the news journal of the Dragonfly Society of the Americas) in 2015. Since the first recorded Wisconsin sighting in Marquette County in June 1989, the Spatterdock Darner has only been reported at a handful of other sites in Waukesha and Walworth Counties. Owing to habitat changes at the site in Marquette County, Spatterdock Darners have not been recorded there in recent years. In 2016 the Spatterdock Darner was reported at one location in Waukesha County and at Forest Beach Migratory Preserve in Ozaukee County. Last year, 2017, the Spatterdock Darner was reported twice, only in Ozaukee County.

What makes Forest Beach Migratory Preserve a favorable

habitat for a “critically imperiled” dragonfly? This is not yet fully understood. In terms of its historically known habitat, the Spatterdock Darner is said to prefer shallow ponds with an abundance of spatterdock plants (water lilies of the *Nuphar* genus), the absence of centrarchid fishes, and a mostly forested landscape. The Clubhouse Pond where the Spatterdock Darner was photographed and netted fits only one of these conditions: it is relatively shallow. There are no water lilies, the presence of fish has been confirmed, and the surrounding landscape is predominantly prairie.



Photo by Freda van den Broek

Spatterdock Darner (*Rhionaeschna mutata*)

It would appear that the Spatterdock Darner’s future at Forest Beach Migratory Preserve hangs in a precarious balance. Time will tell whether or not environmental challenges, like the existence of a successful breeding colony of Purple Martins (predators of flying insects, including rare dragonflies) in the immediate vicinity of the Clubhouse Pond will sufficiently suppress the fragile Spatterdock Darner population so as to relegate it to the status of “historical record”. Wouldn’t it be grand if, in the seasons to come, enthusiasts could delight in the opportunity to observe this striking, once-rare dragonfly?

References:

DuBois, R; Lawrenz, R; Johnson, D; Smith, W; Chrouser, R and Jackson, D 2015. **First records for *Rhionaeschna multicolor* (Blue-eyed Darner) and *R. mutata* (Spatterdock Darner) in Minnesota and Wisconsin, and Their Overlapping Ranges in These States.** ARGIA 27(3): 15.

Legler, Karl and Dorothy with Westover, Dave. 2013 (Edition 5.1). **Dragonflies of Wisconsin**

Wisconsin Odonata Survey
<http://wiatri.net/inventory/odonata/> ;
<http://wiatri.net/inventory/odonata/SpeciesAccounts/SpeciesDetail.cfm?TaxaID=6>

WISCONSIN DRAGONFLY SOCIETY
ANNUAL SUMMER MEETING 2018
EAU CLAIRE COUNTY - JUNE 15TH - 17TH



Eau Claire County has a wide variety of aquatic habitats; this means it has a wide variety of Odonata! We may find Sioux Snaketails along the Eau Claire River, Emeralds at Coon Forks County Park, and Blue-eyed Darners in the western part of the county. Our base of operations will be Beaver Creek Reserve in Fall Creek.



- Friday - Evening
Shadowdragon hunt
 - We will attempt to track down some Stygian Shadowdragons at sundown along the Eau Claire River.
- Saturday at Beaver Creek Reserve
 - Annual Summer Business meeting
 - Eau Claire County Habitats Overview
 - Odonata 101
 - Field trips!
- Sunday
 - Morning field trips



SAVE THE DATES

WDS Annual Meeting June 15th – 17th

This year's Annual Meeting will be based at Beaver Creek Reserve, <https://www.beavercreekreserve.org/> which is roughly 13 miles east of downtown Eau Claire at S1 County Road K, Fall Creek, WI 54742. Plan to join us for the weekend or any part thereof. The event is open to everyone, whether you're new to dragonflies or an old hand.

We plan to hunt for Stygian Shadowdragons along the Eau Claire River at sundown on Friday evening. Saturday will start with a brief meeting and presentation, and then small groups will head out for diverse, guided field trips. We'll wrap up the day with some informal time to share what we found. Sunday will have field trip options too. There's no charge to attend, but donations are welcome, and non-members are invited to join.

Beaver Creek Reserve offers 9 miles of hiking trails over 400 acres of diverse habitats, namely, upland woods, river bottom forests, wetlands and savannah areas. It is bordered by the Eau Claire River and has two small trout stream that run through the property.

The Eau Claire Chamber of Commerce website provides a list of bed and breakfasts, hotels, motels and campgrounds in the Eau Claire area. A description of each is provided, along with the relevant contact information and web addresses. http://web.eauclaيرهchamber.org/Visit/Lodging_Travel_and_Tourism.

The campgrounds at Big Falls County Park, <https://www.travelwisconsin.com/campgrounds/big-falls-county-park-campground-201126> are 3.9 miles from the main meeting venue.

For more dining and accommodation options visit: <https://www.visiteauclaيره.com/restaurants/>

If you have questions, suggestions, or would like to help with the planning, please contact wdragonflysociety@gmail.com.

More details will follow. Mark your calendar. We hope to see you there!



The Wisconsin Dragonfly Society was represented at the Citizen Based Monitoring and Wisconsin Master Naturalist Conference held in Eau Claire in March thanks to Matt Berg; Jennifer Callaghan; the Chrouser Family - Carey, Ryan, and Isiah; and Ann Hartinger Graf.

Special thanks to the Chrouser family for preparing the display (with live nymphs!) and ensuring a presence at the booth.

ARGIA

The News Journal of the Dragonfly Society of the Americas

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MEMBERSHIP MATTERS

Membership in the Dragonfly Society of the Americas (DSA)

Membership in the DSA is open to any person in any country. The annual membership dues of \$15 US include:

- Electronic subscriptions to the DSA's quarterly magazine, *Argia*, and to our journal, the *Bulletin of American Odonatology* (BAO).
- Full access to Odonata Central, including the on-line membership list and searchable, archived editions of *Argia* and BAO.
- Fee discounts at DSA annual meetings.
- Eligibility to vote in DSA elections and to run for a seat on the DSA Executive Committee.

DSA also welcomes sustaining membership of \$20.00 US per calendar year. Along with the regular members, sustaining members help DSA advance the discovery, conservation, and knowledge of Odonata through observation, collection, research, publication, and education. See http://www.odonatacentral.org/index.php/PageAction.get/name/DSA_Membership



Wisconsin Dragonfly Society (WDS) Membership Application

Membership in the WDS is open to any person in any state.

The WDS dues are as follows: \$5 annual single member; \$7.50 for family membership.

WDS costs are minimal. Members must opt-in before WDS will share their e-mail address or other contact information with other members of WDS.

Send check or money order to:

Matt Berg

572 N. Day Rd

St Croix Falls, WI 54024

Name _____

Address _____

City, State, Postal Code _____

E-mail _____ Share? _____

Check membership category that applies: ☐

☐

Annual Individual Membership: \$5.00 ☐

Annual Family Membership: \$7.50 ☐

Lifetime Individual Membership: \$50.00

Lifetime Family Membership: \$75.00

Total enclosed \$ _____

RESOURCES

Links

http://wiatri.net/inventory/odonata/WDS/Images/WDS_ConstitutionBylaws.pdf

Wisconsin Dragonfly Society constitution and by-laws

http://wiatri.net/inventory/odonata/WDS/Images/WDS_Brochure.pdf

Printable brochure of the WDS

<http://wiatri.net/inventory/Odonata/> Resource for citizen participation

<http://wiatri.net/inventory/Odonata/Resources.cfm> List of resources from Bob DuBois

<http://www.facebook.com/groups/wisconsindragonflysociety/> - our group on Facebook - it's a joy to see these contributions from many people and our members helping them identify their odes.

[www.facebook.com/WisconsinDragonflySociety/photos stream](http://www.facebook.com/WisconsinDragonflySociety/photos_stream) - our Facebook page photos. You can go to this link even if you are not a Facebook member.

<http://bryanpfeiffer.com/2013/12/31/the-year-in-flight/#gallery/4056/264/0> Bryan Pfeiffer is a blogger who enjoys dragonflies as well as birds. This slide show has several beautiful pictures of odonates. "Follow" him and you'll get lots of good reporting on the habits of the Odonata.

<http://bryanpfeiffer.com/2014/01/09/surviving-the-polar-vortex/> - an amazing story of the early collecting by Philip Powell Calvert in Costa Rica.

<http://bryanpfeiffer.com/> - the home page of Bryan Pfeiffer's website – many great photos here and news of GLOM, etc.

<http://www.odonatacentral.org/> - OdonataCentral hosts the official website of the Dragonfly Society of the Americas. The journals *Argia* and the *Bulletin of American Odonatology* are online and searchable.

Supplies

Nets, vials, pins, etc. can be purchased from BioQuip Products, Inc., website:

<http://www.bioquip.com>

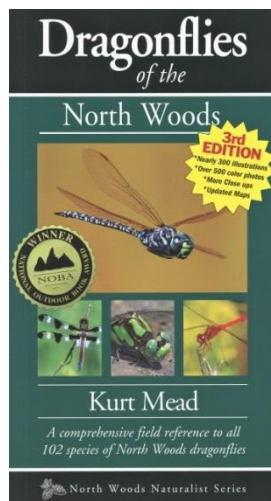
Collecting envelopes can be acquired on-line from: see tab for Books and Supplies, Envelopes

<http://www.iodonata.net/>

RESOURCES

Recommended Guide Books

- Burton, Paul. 2010. ***Common Dragonflies of Northern Door County***: Stonehill Publishing; Ephraim, Wisconsin. (Available from www.doorcountybooks.com)
- Legler K., D. Legler, and D. Westover. 2013. ***Color Guide to Dragonflies of Wisconsin***: Edition 5.1; Karl Legler, Sauk City, Wisconsin. This new version has been expanded to include all WI species of dragonflies; available from <http://uwarboretum.org/bookstore/>
- Lam, Ed. 2004. ***Damselflies of the Northeast***: Biodiversity Books; Forest Hill; New York. 96 pp. (Note: very useful for WI, having all but one of our species.) <http://www.edlam.net/book.html>
- DuBois, R. 2005. ***Damselflies of the North Woods***: Kollath-Stensaas Publishing; Duluth, Minnesota. 128 pp. (Currently out of print, but a new edition is in the works.)
- Mead, K. 2017. ***Dragonflies of the North Woods***: 3rd Edition. Kollath-Stensaas Publishing; Duluth, Minnesota. <http://www.dragonfliesofthenorthwoods.com>
- Paulson, D. 2012. ***Dragonflies and Damselflies of the East***: Princeton University Press, Princeton, NJ. (This is the most complete reference for eastern North America).
- Garrison, M. 2011. ***Damselflies of Chicagoland: A Photo Field Guide***, version 2, 135 pp. (Free PDF down-load). <http://fieldguides.fieldmuseum.org/guides/guide/388>
- Rosche, L., J. Semroc, L. Gilbert. 2008. ***Dragonflies and Damselflies of Northeast Ohio***: 2nd Edition. Cleveland Museum of Natural History, Ohio, 300 pp. <http://www.ddneo.info>
- Tennesen, Ken. 2010. ***Waushara County Dragonflies and Damselflies***: 32 pp. (Available from the author: ktennessen@centurytel.net).



The new and expanded 3rd edition has additional photographs and illustrations for greater ease of identification, expanded range maps and more!



From: _____

