Newsletter of the Wisconsin Dragonfly Society

Wisconsin Odonata News

Vol.5 Issue 1

Spring, 2017

Featured in this issue:

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



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Banner photo (left) Spot-winged Glider
Banner photo (middle) Wandering Glider
Banner photo (right) Variegated Meadowhawk

By **Kate Redmond**

Cover photo: Common Green Darner *(Anax junius)* male
By **Freda van den Broek**

Greetings! Welcome to the Spring 2017 edition of the Wisconsin Dragonfly Society newsletter. I would like to start off my term as president by offering a heartfelt thanks to outgoing president Dan Jackson. Dan has been a great leader for us since the inception of the WDS and continues to be heavily involved as a member of the board of directors. His leadership has been instrumental in moving us forward in our quest to become a non-profit organization, which many of us on the board have no experience with. The time he has invested in this is much appreciated! We also have Dan to thank for organizing last year's annual meeting in Jackson County, which, in terms of attendance and overall enthusiasm of all the participants, may be considered one of our most successful annual meetings to date. I hope that I can apply what I've learned from Dan and continue to grow this society. Please join me in thanking Dan for all of his hard work!

To reflect on our success from 2016, last year was our first year having surpassed 5000 reported sightings on the Wisconsin Odonata Survey website. In addition, we had 52 different people report to the WOS in 2016, 21 of whom were reporting for the first time. Our success in expanding our reporting has certainly been catalyzed by our very active Facebook group. If you have not visited the group I encourage you to do so. During the field season, there are some great photos and interesting discussions that may range from behavioral observations to handy identification tips and where to find the ode that's on your "most wanted" list. In addition, our friendly experts are willing to help with identification and other questions in a timely manner.

So what's happening in 2017? We started the year by holding our first ever WDS winter board of directors meeting. We discussed many holdover items from our last annual meeting, and came up with some new ideas to move our society forward. I look forward to having the fruits of some of this labor to share with you at the 2017 annual meeting. Speaking of which, our meeting this year is scheduled for the weekend of July 14th through 16th at Forest Beach Migratory Preserve in Ozaukee County. More detailed information on the meeting agenda and the odonates that we may hope to see will be available in the coming weeks.

Thank you all for taking the time to read the newsletter and for being a part of the WDS. I hope to see you soon. Now get out there and find some odonates!

Ryan J. Chrouser

President

(Research) Topics of Interest this Year

Robert DuBois
Dept. of Natural Resources, Superior, Wisconsin <robert.dubois@wisconsin.gov>

For me, "topics of interest" really means "*research* topics of interest," because I think doing research is simply the coolest thing ever, and frankly, don't really understand why anyone would want to do anything else. You don't actually need to bother telling me why you might like to do something else because honestly, you aren't likely to convince me that anything is cooler than doing research. I'm writing this article because we, and by "we" I mean everyone who is passionate about enjoying and protecting odonates in Wisconsin, *we* need *you* to have at least a passing interest in odonate research. Back in the "olden days", odonatologists (people who study odonates) were mostly professionals who worked in labs with microscopes and other tools. While the great majority of people who publish their work in major scientific journals remain in that category, it is widely recognized that citizen scientists, that is, enthusiasts of all stripes (and potentially including you), are making major contributions in many areas of nature study. In fact, in a climate of tightened funding for many natural resource programs, many resource professionals readily acknowledge that they need the help of the public to collect the data needed to make wise resource decisions. That is why the Wisconsin Odonata Survey (WOS) was started in 2002, and even prior to that, interested non-professionals were contributing their dragonfly data to the WDNR, just not through a formal program. I'll say it again - *we* need *you*!

Like any scientist I have my own select areas of research about which I'm especially passionate, and I'd be happy to share them with you sometime if you're interested, but from the perspective of WOS we can list the following categories of information need: better understanding of the distributions, critical habitats, and life history aspects of uncommon species in the state; creating better identification tools for adults and nymphs of all species ; improving sampling methods; and of course, keeping our eyes open for "new" species not previously known to occur in Wisconsin, but known to occur in other nearby states. Let's look closer at these categories of need. Since the Annual Meeting of the Wisconsin Dragonfly Society (WDS) is in Ozaukee County this year, I'll focus mostly on species and opportunities in the southeastern counties.

Distributions – Understanding where uncommon species are located is a fundamental part of knowing how to protect them. You can't protect what you don't know you have, and knowing where it is located is a big part of knowing what you have. Any species that is rarely seen in Wisconsin creates a distributional need for us as protectors of, and advocates for, the resource, because the species could obviously occur in other areas in addition to where is has been found. Here are some specific examples: Smoky Rubyspot (*Hetaerina titia*) is known from the Sugar River and some of its tributaries in Rock and Green counties. It could easily occur in other river systems in Wisconsin as well, but it looks quite a bit like the American Rubyspot (*H. americana*), so it is very likely under-detected. So, please look carefully at your rubyspots in the southern counties this year! Several newly discovered species in the state are known from only a single site or river system or very small cluster of them. These include Blue-ringed Dancers (*Argia sedula*), which were found in the Bark River in Waukesha and Jefferson counties last year (DuBois et al. 2016). Where else might they be hiding? Let's find out!

Blue-ringed Dancer (*Argia sedula*) male
Photo by Dan Jackson

Several years ago Mocha Emeralds (*Somatochlora linearis*) were found in one small, forested stream (Haller Creek) in Brown County (DuBois et al. 2014). Could it really be that this southern species occurs in Wisconsin only in one tiny stream section halfway up the state? Well, not likely, but small, forested streams are a woefully under-surveyed type of habitat in Wisconsin, especially in the southern counties (nudge, nudge, wink, wink). And what about Plains Emerald (*Somatochlora ensigera*), which in Wisconsin has a cluster of known populations in the lower reaches of streams flowing into Lake Superior in Douglas and Bayfield counties; might it occur in the lower reaches of streams flowing into Lake Michigan as well? Yes, it probably does, as two adult specimens were collected from Oak Creek (N42.88; W87.91) in Milwaukee County in 1978, but no one has looked there or in other similar streams since. And let's not forget Delta-spotted Spiketail (*Cordulegaster diastatops*), which

while known in Wisconsin only from a few tiny streams and ditches in Marinette County, is found to the north in the Upper Peninsula of Michigan, to the east throughout the rest of Michigan, and has even been reported to the south in northern Illinois. Is it more widespread in our state than we currently know? Probably, but again, few folks are looking in the right places.

There are a number of other species, currently known to be resident here in 7 or 8 counties or less, that might be more widespread than we think. These include Springwater Dancer (*Argia plana*), Slender Bluet (*Enallagma traviatum*), Lilypad Forktail (*Ischnura kellicotti*), Great Spreadwing (*Archilestes grandis*), Southern Spreadwing (*Lestes australis*), Jade Clubtail (*Arigomphus submedianus*), Unicorn Clubtail (*A. villosipes*), Spangled Skimmer (*Libellula cyanea*), and Painted Skimmer (*L. semifasciata*). If your bent is traveling far and wide looking for rare species or personal "lifers", there's a nice little "hit" list for you! In the process of chasing down these species you stand a good chance of helping us flesh out our knowledge about their distributions, and everybody wins! Gotta love those win-win situations!

Critical Habitats – When we think about protecting a species, we're not thinking about trying to protect individuals of that species, which is usually impossible or at least impractical, but rather we need to protect its required habitat so that the population can remain healthy. While characteristics of adult habitat can be vitally important, the habitat for the various stages of the nymphs is even more so. After all, most of the life of the odonate is spent underwater. Further, when we find nymphs and exuviae at a certain waterbody, we have the potential to learn quite a bit about the habitat that the species needs for development because the critical habitat is right there in front of our eyes. In contrast, we might find an adult dragonfly flying almost anywhere, perhaps miles from anything that could be considered critical habitat for the species. While adult habitat needs, when known, are certainly not to be dismissed, it is the nymph habitat that absolutely must be protected.

But a problem looms - our knowledge of the critical nymph habitat for a number of species is sorely incomplete. For some species, we don't even know if they breed successfully here at all (see section below). For others, we have some incomplete level of knowledge, but is it really enough to allow us to protect them? For example, many species of Striped Emerald (genus *Somatochlora*) evidently have very exacting habitat requirements, but most of the species are elusive and we often have trouble finding the nymphs. When we do find a few nymphs or exuviae of those Striped Emeralds that live in bogs and fens they tend to be clumped in certain areas as opposed to being randomly distributed. Why? Often we don't know, but that knowledge could be critical to protecting their habitat. That is why it is so important to *write it down* if you think you're beginning to understand something about a rare species' habitat needs (e.g. DuBois et al. 2015a; DuBois and Tennessen 2008). Otherwise, whatever you've learned will be lost. Here are some specific examples of habitat information needs: Forcipate Emerald (*S. forcipata*) nymphs live in certain kinds of fens, but are devilishly hard to find. What, exactly, are the habitat conditions they need? Mitch Haag and colleagues in Minnesota are beginning to unravel some of the mysteries surrounding this species and will hopefully have something to publish soon. Spatterdock Darners (*Rhionaeschna mutata*) have a very restricted and perplexing distribution in the Upper Midwest, and several tiny populations in Wisconsin and Minnesota appear to be declining (DuBois et al. 2015b). Are habitat changes the problem? Ron Lawrenz and a number of colleagues in Minnesota are working to understand the reasons for the decline there. Here in Wisconsin, we just don't fully understand whatever it is that's going on.

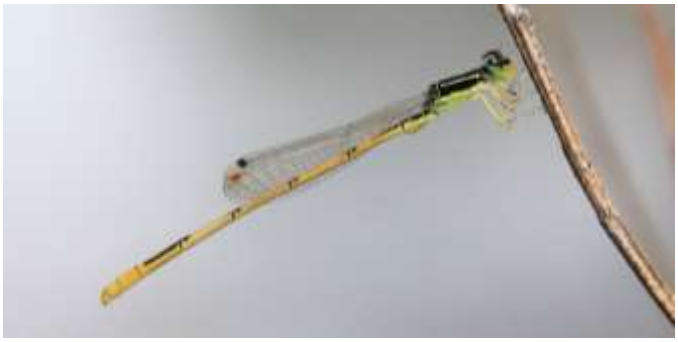
Swamp Darner (*Epiaeschna heros*) is at the northern edge of its range in Wisconsin where known habitats are scattered and perhaps ephemeral. What might we be able to do to protect and preserve its habitat?

Spatterdock Darner (Rhionaeschna mutata) at Forest Beach Migratory Preserve

Well, protecting known breeding sites is one thing, but beyond that, we're not sure. It is a big dragonfly with a small preferred habitat, usually consisting of temporary (vernal) ponds. Most temporary pond species get through the annual dry period (usually late summer, fall, and winter) by overwintering in the egg stage, and for a while that was thought to be the case for *Epiaeschna* as well. Until, that is, Andrew Boose (2014) did some fascinating work in Ohio to learn that part-grown nymphs were overwintering in the leaf litter at the bottom of then-dry vernal pools. But Ohio isn't quite as far north as the areas in Wisconsin known to have Swamp Darner breeding habitat. Do they overwinter in the same way here? Maybe you'll be the one to figure that out!

Life History Aspects – Last year Freda van den Broek and I wrote a somewhat speculative article about what the

Comet Darner (*Anax longipes*) was doing in Wisconsin (DuBois and Van den Broek 2016). The title of the article could have implied that we knew. We didn't, and still don't, but enjoyed guessing, and will continue to do – you guessed it – more *research*. Is the species migratory in this part in its range, or are there small, scattered, resident populations? The answer to that question could influence how the species is managed, so having better life history information about it, or any other species, is not just a matter of arcane academic interest, but could have real, practical applications. Citrine Forktail (*Ischnura hastata*) is not found in Wisconsin most years, but occasionally shows up here, sometimes in substantial numbers (Tennessen 2011). It must be migratory, but what conditions cause it to "irrupt" here? There may not be much we can do to protect this species in Wisconsin, but until we understand more about why and when it comes, and what habitat conditions it needs when it gets here, we have little basis for even starting the conversation. Two species have each been recorded a few times in southeastern Wisconsin, but no breeding sites have been documented. Yes, I'm talking about Great Blue Skimmer (*Libellula vibrans*) and Blue-faced Meadowhawk (*Sympetrum ambiguum*; Luhman 2012). Management-wise it makes a big difference whether a species is resident and breeds here or if a few vagrants simply get blown in by the winds from elsewhere once in a while. Let's find their breeding sites this year!



Citrine Forktail (*Ischnura hastata*) male

Potential new species for the state – The new species finds in Wisconsin in recent years have mostly been either migratory species or southern species that have shown up in the southern half of the state. We've exhausted most of the possibilities of finding northern species not previously known to occur in Wisconsin (with a few juicy exceptions), which is totally cool since the annual meeting this year is in the south. Southern species could be showing up here for a variety of reasons including range shifts due to climate change or changes in habitats, or perhaps they were here all along but went unnoticed because many of the southern counties have never been adequately surveyed. In any case, there are many southern species that *could* show up here, but I'm highlighting a trifecta of particularly intriguing possibilities to look for (note that two of the three have the same habitat, hint, hint):

1). Slender Baskettail (*Epitheca costalis*) is found in sandy lakes, ponds, and slow streams in Iowa and Illinois right up to the Wisconsin state line. It is just screaming to be found in any of our southern counties, and I'm going to go out on a limb to say I'm quite sure it occurs here, where it has been hiding in plain sight. Unfortunately there is a teensy weensy little problem - it looks frustratingly like a smallish Spiny Baskettail (*E. spinigera*), or a clear-winged Common Baskettail (*E. cynosura*), with which it probably hybridizes. Whew! I never said this was going to be easy! For those not afraid of a challenge, look for a Baskettail with a particularly slender abdomen and take it from there!

2). Banded Pennant (*Celithemis fasciata*) occurs in sandy lakes, ponds, and slow streams in southern Michigan and northwestern Indiana. Could it be trying to sneak around the southern tip of Lake Michigan? Fortunately, the wing patterns are pretty distinctive, so if you see one you'll probably know it.

3). Allegheny River Cruiser (*Macromia alleghaniensis*) loves slow-flowing streams and rivers that might or might not be rocky. Although the main part of its range is quite a bit to our south, it has been found a few times in northern Illinois. That's the upside; the downside is that it looks a lot like our common Swift River Cruiser (*M. illinoiensis*), and being a Cruiser, it is well, fast, and tricky to catch. Look for a Cruiser with a little more yellow on the abdomen than the Swift River version – including a complete yellow ring on segment 7 (S7) and a nearly complete one on S2. And I'll be wishing you all the luck in the world!

Some additional southern species that could turn up in our southern counties include Flag-tailed Spinyleg (*Dromogomphus spoliatus*), Eastern Ringtail (*Erpetogomphus designatus*), and Gilded River Cruiser (*Macromia pacifica*). However, keep your eyes open for the unexpected!

Identification Tools – We need to improve our tools for identifying adult odonates in flight, when perched, or in photographs (i.e. we need better field marks). Remember, we are transitioning from an era when most ID determinations were done under a microscope to the present state of mostly macro-photograph and in-hand determinations. The need to collect odonate specimens under some circumstances will never be completely eliminated[1], but let's face it, we are going down the same road previously traveled by the birders and butterflyers, who have been refining field marks for many decades. I've used specimens housed in the Odonata Collection I manage at the WDNR Service Center in Superior to try to make some inroads into a few ID problem areas (DuBois 2016; 2017) and ARGIA is experimenting with a new ID Corner to meet this need (beginning with issue 29(1)), but the need is great and "many hands lighten the load." If there is some taxonomic research you are interested in doing, let me know if you would like to examine any specimens from the WDNR Odonata Collection.

There is also a need to improve ID tools for the nymphs. Ken

Tennessen is in the process of finishing up a much-anticipated book on the nymphs of North American dragonflies (Anisoptera). It will be heavily illustrated and enormously helpful to those of us interested in identifying the mysterious underwater stages. He and I are also working on a key to the Odonata nymphs of Wisconsin, but publication of that is still about two years off. Having robust sample sizes is important when working with nymphs, because many of the diagnostic structures that must be used are vexingly variable, and rearing of nymphs is often necessary. When Ken, Matt Berg, and I worked to distinguish the nymphs of Common Baskettail (*Epitheca cynosura*) and Spiny Baskettail (*E. spinigera*) we ended up rearing over 100 specimens from which we made a number of body-part measurements –all that just to separate two species (DuBois et al. 2007). When Ken and Bill Smith worked to improve the key to nymphs of *Ophiogomphus* (Snaketails) of Wisconsin they measured or scored 144 morphological characters on 684 specimens (Smith and Tennessen 2016).

Swamp Darner (Epieaeschna heros) in Ozaukee County

I mention these realities to underscore the point that large numbers of specimens are often needed to account for many potential sources of variation when doing taxonomic work. I'm still looking for part-grown nymphs, full-grown nymphs, and reared exuviae of many of the species mentioned in this article, and many other species as well, as I work to produce an improved key to species in Wisconsin. This year I'm especially interested in obtaining nymphs and reared exuviae of Southern Spreadwing (the nymph of which was never adequately described) and Lilypad Forktail (nymph has not been described). Other nymphs I would like to obtain include Smoky Rubyspot, Slender Bluet, Great Spreadwing, Mocha Emerald, Great Blue Skimmer, and Blue-faced Meadowhawk. If you can supply any of those, please shoot me an email.

Sampling Methods – We need to develop and refine standardized surveying techniques for adult odonates and exuviae that we can recommend to cooperators. I've tried to do some work on the latter (DuBois 2015), but have largely ignored the former because a number of researchers have been working through the kinks of various methods, so I thought I'd wait and see what they come up with. A recent paper that described the development of a monitoring system in Massachusetts seems to have considerable merit (Buchsbaum et al. 2016). I will be meeting with the lead author to learn more about their system when I travel to MA this spring. We clearly have a need to begin evaluating procedures others have developed to see what will work best here. If you have an uncommon passion for this sort of thing, please shoot me an email.

Summary – Clearly, there is lots to look for, lots to learn, and lots you could get involved with this year. If anything mentioned in this note sounds interesting to you, there is no better time than now to jump in. Try to network with others who are interested in the same things you are. And bear in mind that the research items discussed here are only those things that I'm personally involved with and that are particular needs for WOS. There are other odonate-related research projects going on in Wisconsin that I didn't mention because I didn't want to cast too broad a net. Clearly, there are no limits to the possibilities for doing Odonata-based research in Wisconsin. Being curious, observing nature, exploring ideas, discovering insights, asking questions, and recording what you learn – these things are the spice of life for many of us, and the fun should certainly not be left just for the professionals. So unleash your passion, energy, and vision, and fire up!

Footnote

[1]Collecting specimens has come to be viewed as a politically incorrect activity in some circles, but responsible collecting has been the foundation of entomological research for centuries and continues to be so to this day. Collected specimens are essential for many kinds of research because they permit body-part measurements, and analyses of color patterns and markings, all of which can be required for determining and discriminating among species and for providing identification tools. Specimens are frequently required for DNA analyses in systematic studies as well. Properly preserved and curated specimens can last for hundreds of years and are vital for determining changes in distributions or habitats over time. Information gained from collected specimens helps us to find and protect populations of rare species and their habitats. Collected specimens are also frequently useful in education. However, collecting odonates illegally, for sale, or without purpose is unacceptable; for more guidance on responsible collecting see the Official Collecting Guidelines of the Dragonfly Society of the Americas and the Code of Practice for Collecting Specimens of the World Dragonfly Association.

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Above: the author, Robert DuBois and fellow WDS board member Joanne Kline, searching for *Argia sedula* nymphs in a section of the Bark River.

Joanne Kline holds a Fawn Darner nymph (*Boyeria vinosa*) scooped from the Bark River.

Voucher specimen used in a workshop at the UWM Fieldstation.

Former WDS President and current board member Dan Jackson, as seen in action during the 2016 Annual Meeting in Black River Falls.
Photo by Freda van den Broek

Examining the abdominal and thoracic markings of the Springtime Darner (*Basiaeschna janata)*

Female Meadowhawk (*Sympetrum sp.*) showing some residual egg mass.
Photo by Alon Coppens

Seeking Odonate Enthusiasts with a Passion for Education and Photography

Jenn Callaghan, Joanne Kline and Freda van den Broek

During a productive winter meeting of the WDS board members in January, a motion to form an education subcommittee was accepted. It is hoped that the formation of this subcommittee and the recruitment of enthusiastic volunteers will make it possible to transform some of our good ideas into excellent resources!

One of the first tasks facing the Education Subcommittee is the schedule of presentations for our upcoming annual meeting. We hope to introduce topics that will engage the interest of a broad range of enthusiasts from the mildly curious to the seriously obsessed. Stay tuned for the meeting agenda which we hope to share soon.

The development of cutting edge marketing and educational materials has been identified as one of the committee's top priorities. The Education Subcommittee will be working with Laurie Smaglick Johnson on the creation of visually stimulating presentations that could be used by educators to bring the wonder of odonates into the classroom. The goal is to have ready-to-go presentations that will be suitable for children and for adults.

Some assistance from our talented photographers will be required in order to create a practical field guide that will clearly illustrate the key distinguishing field characters of our most common (and commonly confused) species. Attention will be given to abdominal appendages, thoracic and wing markings and other characters that are discernible upon hand examination. A list of "most wanted" species and field markings will be available by our annual meeting.

Lastly, we would like to invite you into the WDS education conversation. We're looking for people who are interested in contributing ideas about education opportunities and strategies, and, where possible, volunteer the time to make it possible for the WDS to develop our outreach programs! Please contact Jennifer Callaghan for further information. jcallaghan@urbanecologycenter.org

We look forward to a fun season with an abundance of odonates to enjoy. See you in July in Ozaukee County!

Wisconsin Dragonfly Society Annual Meeting

on

Friday July 14th – Sunday July 16th

at

Forest Beach Migratory Preserve

4970 Country Club Road
Port Washington, WI 53074



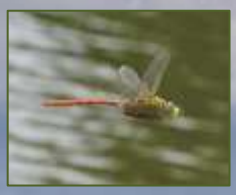

Activities for odonate enthusiasts of all levels

Field trips ranging from gentle walks on- site to off- site habitat exploration (boots or waders may be required)

Presentations on**:**

Basics of nymph identification

Basic and advanced techniques for photographing odonates



Meet some of Wisconsin's top odonate experts!

Look for the rare and elusive Comet Darner!

Visit the Wisconsin Dragonfly Society on Facebook for further information

E-mail: widragonflysociety@gmail.com

Please join members of the Wisconsin Dragonfly Society, dragonfly and damselfly enthusiasts and friends in Ozaukee County for our 2017 meeting.

This fun-filled weekend event is open to the general public.

Admission is free for members;

Non – members: a donation of $5.00 per person or $7.50 per family will be appreciated

Save the Dates

WDS Annual Meeting July 14th – 16th

Joanne Kline

This year's Annual Meeting is based at Forest Beach Migratory Preserve, along Lake Michigan, a few miles north of downtown Port Washington. Plan to join us for some or all of the events, which are open to everyone, whether you're new to dragonflies or an old hand.

We'll gather at The Preserve, in the clubhouse of a former golf course, on Friday evening. Saturday will start with a brief meeting and presentation, and then small groups will head out for diverse, guided field trips. Port Washington has many options for dinner, and we'll wrap up the evening 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.

Forest Beach was protected and restored by The Ozaukee Washington Land Trust as important habitat for migratory birds (and dragonflies!) along the Lake Michigan Flyway. This location gives us a chance to see a few uncommon odonate species. Comet and Spatterdock Darners are resident in at least one pond at The Preserve, and Unicorn Clubtails were found last year in nearby Sheboygan County. July is the best time for Slaty Skimmers and Hine's Emeralds at Cedarburg Bog State Natural Area, which is within a fifteen-minute drive of the Preserve. This is also a chance to visit wetlands and streams in one of the least surveyed areas of the state, for maybe some new county records.

Other ideas in the works are a paddling field trip on Mud Lake, at the south end of Cedarburg Bog, a workshop or two that digs a little deeper into ode ecology and education, and a Saturday night cookout. If you have suggestions, or want to help plan, please contact widragonflysociety@gmail.com.

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

Where to Stay, Eat and Play in and around Port Washington

The Port Washington tourism website provides a comprehensive list of all the bed and breakfasts, hotels and campgrounds in the Port Washington area. A description of each is provided, along with the relevant contact information and web addresses.

http://www.visitportwashington.com/tourism/lodging/

The nearest hotel to the meeting venue is the Country Inn and Suites, which is 5.3 miles away.

The campgrounds at Waubedonia County Park and Harrington Beach State Park are 9.1 and 4.3 miles respectively from the main meeting venue.

See http://www.visitportwashington.com/tourism/eat_shop_play/ for a list of breakfast, lunch, and dinner venues.

Odonata Field Season Prep 101

Ryan Chrouser

We at the WDS thought it would be nice to share what a typical spring field season preparation looks like, so that you too could be ready to hit the ground running when the first Common Green Darner flies by your window, looking for a nice spot to raise a family. This isn't meant to be an all-encompassing guideline, but more a look at a process. Your process may be entirely different, but hopefully this will give you some ideas as to what you can do to prepare for the Odonata. I will start at the end of the last field season so you can get the full offseason feeling leading up to the flurry of activity that comes just when the extended forecast shows a couple of sixty degree days.

November:

By late November I have finally resigned myself to the fact that I will not be netting any dragonflies for a while, so the nets come out of my car. This includes the heavy extension net that I favor for long distance netting over ponds and marshes; the collapsible net with the extensions that I favor for walking in rivers and streams; and the extra nets I have in case my son is with me, or if have to provide an entire classroom with nets for an afternoon (it might happen someday). I remove my satchel with my two favorite field guides from my everyday backpack, knowing that they won't help me much in the winter. I won't say which ones they are, but they may have "of the Northwood's" in their titles.

December:

I begin the withdrawal process. I tend to relapse a few times over the next few weeks. I peruse my exuvia collection or page through some field guides beside my desk. I frequently visit the WOS website to see if there were any other late season entries. If the number went up, I search the data to see what else was added. None of this is healthy and really just makes me a little depressed. This phase lasts about a month, with Christmas finally pulling me out of my zombie-like stupor. Then happy children and searches for some winter owls and Northern Shrikes help bring me back to the land of the living.

January:

Reality has set in. I converse with the WDS board of directors through email. We discuss next year and what new things we can do to help grow our happy group. I have largely stopped looking at last year's data, and am now more focused on the frustration of trying to photograph birds with a camera that really isn't up to the task. Why does every picture I take of a Red-breasted Nuthatch end up blurry? That bird just won't sit still!

It's cold of course. My thoughts sometimes drift to the creek below my house, and if it really would be crazy to try to find Fawn Darner nymphs when the temperature is in the high single digits. I convince myself that the answer is yes, that it is crazy. But deep down inside, I keep wondering what the definition of crazy really is, so I look it up on Google.

1. Mentally deranged, especially as manifested in a wild or aggressive way.
   Mad, insane, out of one's mind, deranged, demented, not in one's right mind, crazed, lunatic,
   non compos mentis, unhinged, mad as a hatter, mad as a March hare; *More informal:* mental, nutty nutty as a fruitcake, off one's rocker; not right in the head, round/around the bend, raving mad, batt, out to lunch, crackers, nutso, out of one's tree, wacko, gonzo
   Vulgar slang: batsh*t
2. Extremely enthusiastic
   Passionate about, (very) keen on, enamored of, infatuated with, smitten with, devoted to…
   Informal: wild about, mad about, nuts about, hog-wild about, gone on.

Judging by the looks people give me when I walk around Carson Park in Eau Claire with an insect net fully extended to twelve feet, wildly swinging out over the water, some might say I fit definition #1. There is no doubt that I fit definition #2. So it turns out that I am crazy.

February:

We get that ridiculous freak high temperature week and then I panic that I'm not ready for Odonata yet. It then gets incredibly cold again and I return to shoveling mounds of snow as my main winter pastime. In Wisconsin you just never know. The positive thing about the later unpredictable winter weather of Wisconsin is that it begins to awaken the part of my brain that went into diapause for a couple of months. So I begin to get ready. I check on my nets. Yep, they are all still there. I locate my favorite field guides. Undoubtedly the most important thing I do in February is begin to think and plan. What's my first move?

I go back to the WOS with a mission. Which counties near me have holes in their species lists for the early fliers? I note that no one has reported Common Baskettails in Buffalo County, Springtime Darners in Pepin, or Dot-tailed Whitefaces in Pierce; my early season target list begins to form. I normally don't plan any surveys for earlier than May, but 2017 is a little different. I was fortunate enough to find a Ringed Boghaunter in my home county of Eau Claire last May.

One lonely male Ringed Boghaunter. Because of this fortuitous find of 2016, I actually have a readymade plan for April. Where there is one Boghaunter, there must be more. I found this rarity too late to catch its main flight season last year, so my April will be all about Boghaunter hunting. I will look for nymphs, exuviae, and adults. I become overly excited to test my rudimentary identification skills. Then I need to calm myself down. It is still only February.

March:

March comes in like a lion. That means it is still winter, and I spend much of my free time when I'm not holding a shovel staring out the window with a scowl on my face. Usually I perform this task with a cup of coffee in my hand. This goes on at least until St. Patrick's Day. Invariably we get a sunny day that reaches 50 degrees, and again I panic that I'm not yet ready. Further preparations are necessary. The long term forecast is checked several times every day, looking for that first sixty degree day with glorious sunshine. Then I see that day about one week out, I begin to mobilize. Like a warrior readying for battle, I meticulously start to retrieve my nets. The heavy retractable extension net from the main closet glows with a fire all of its own. I take it outside and test all the extensions. I swing it with a purpose. It feels familiar and right in my hands. I ritualistically collapse the extensions and open the back of the van, laying the mighty net carefully and respectfully in its rightful place on the back seat. I repeat this process with my lighter collapsible extension net, then the smaller nets. The nymph nets also make their way out of hibernation. They all in turn take their place in the van, awaiting their call to action.

Other items must also be located and tested. My backpack is restocked with sample cups, the cameras are tested and all batteries are charged. Swiss army knife – check, compass, - check (I don't trust the technology entirely yet, and the compass never runs out of batteries), extra field guide – check, and it goes on. You may not need all of these items for your expeditions, but I have a tendency to walk into dense swamps, where finding one's way out can be challenging. So in short, I may be stuck there for a while. I look over the kayak to ensure that a winter rodent invasion didn't make my vessel unseaworthy. I locate my best hat and try it on; having a good hat is both useful and fashionable. Do not overlook the hat.

The most important item for me is the waders. You don't want to find out that a nail that you stepped on last year left a leak in the bottom of one of your boots. That may or may not have happened to me; but that story is for another time. So I put on the waders and head down to the creek with one of my nymph nets. I bring an assistant with me so I don't have to climb the slippery bank too many times. This way I can just hand the nymphs off and inspect them at the end of the trial. Choosing the right assistant is important. I have found that children older than 5 but younger than disillusioned teenagers are the most effective. They're old enough to not fall in the water, but young enough to still think that dad's obsession with dragonflies is cool.

The water is still ice cold, so I can't take much more than an hour in the creek. I hope for Snaketails and Zebra Clubtail nymphs; a Spiketail would be nice. If I found these, they would begin my yearly spring collection of dragonfly nymphs. I will likely find some Fawn Darners, Shadow Darners, and a plethora of Jewelwings. These more common and already confirmed breeders in my creek are released. I would only keep a rarity to rear out this early in the season, otherwise there are too many mouths to feed by the time the calendar turns to June. The important point is that the waders do not leak.

April:

I am ready. I study the forecast. I look at the skies frequently. I start to carry one of my nets with me every time I go for a hike. Then it happens! The first Common Green Darner skates the surface of the sunlit water in one of my favorite haunts. There is nothing common about this dragonfly the first time you see it in the spring. The bold green thorax and sky blue abdomen shine with a vibrancy of life that is well ahead of the rest of the spring transformation. The wheels are set into motion. The van engine roars to life. I wind down the road less traveled and park the van in the place that I know will stay shaded by the fragrant pine trees. All of my preparations are now tested. The waders go on, the pockets are filled, camera, binoculars, sample cups, and nets for both the aquatic and aerial Odonata. Lastly, there's the hat. I imagine that if Indiana Jones were an entomologist instead of an archeologist that this is what he would look like. I turn toward the familiar path that leads to my hidden marsh, fully armed and ready for science. The Boghaunter is out there, calling to me and my own kind of crazy.

Ringed Boghaunter,(*Williamsonia lintneri)*
Photo by Ryan Chrouser

Kate Redmond, also known as ***The BugLady*** has been writing a **Bug o'the Week**, virtually every week, for almost ten years. A wealth of these informative and entertaining articles about various insects, including many of our dragonflies and damselflies can be accessed via the UWM Field Station's website. Visit the archives to enjoy more of the The *BugLady's* delightful sense of humor and her stunning photographs. We thank *The BugLady* for permission to reprint this article.

Variegated Meadowhawks

As the BugLady stalked this handsome (and at the time, unknown to her) dragonfly, she kept thinking, "*Sure looks like a meadowhawk and flies like one, too, but it's April*" (in fact, it was the freakishly warm April of 2012). Her photography philosophy being "Shoot First and Identify Later," she appreciated the beauty of this dragonfly in the moment, and then again when she discovered what she was looking at.

Variegated Meadowhawks (*Sympetrum corruptum*) are in the Skimmer family Libellulidae. *Sympetrum* means "*with rock*" and may refer to the rocks and other substrates that meadowhawks perch on to gather heat early in the day (Variegated Meadowhawks are said to spend more time perched horizontally on and near the ground than do other meadowhawks). One explanation for the species name "*corruptum*," from a Latin root meaning "*to break,*" is that it refers to the dragonfly's geometrically-patterned abdomen, and another comes from the Variegated Meadowhawks' ability to tolerate brackish (corrupt) ponds as readily as it does pristine wetlands.

Variegated Meadowhawk (*Sympetrum corrupum*) male

At 1 ½ inches long, it's at the large end of the meadowhawk continuum. Its wide hindwings, tinted veins on the leading edge of all four wings, *stigmas* (pigmented spots at the wing tips) that shade from pale-to-dark-to-pale again, yellow/white spots on the sides of the thorax, and that patterned abdomen mark it as a Variegated Meadowhawk, though individuals can vary in both color and size. Where the male has red markings, the female and the newly-emerged juvenile/teneral start out gold and become more red/rust with age. And, while they can't be confused with any of our other Wisconsin meadowhawks, females do resemble, at first glance, two other Libellulids – the Wandering Glider (*Pantala flavescens*) and the Spot-winged glider (*Pantala hymenaea*). All three species can be seen side by side in the banner at the start of this newsletter.

Wing detail of the male Variegated Meadowhawk

Kurt Mead, in Dragonflies of the North Woods, warns "*Don't set out to impress anyone by capturing a Variegated Meadowhawk, as it may make a fool out of you. This is one of the most difficult dragonflies to net; it is very shy and wary (and seems to possess a level of telepathic ability)*."

Variegated Meadowhawks have tweaked the meadowhawk model a bit.

First, the feisty male is unusual among meadowhawks because he defends a territory over his pond. The pair flies in tandem as the female oviposits, dipping her abdomen into the water. Here are some super shots of Variegated Meadowhawks, and scroll down for a great video of ovipositing http://dfwurbanwildlife.com/2014/01/29/insects/variegated-meadowhawk-egg-laying/.

Variegated Meadowhawk eggs hatch quickly, and the resulting naiads are small (3/4" max), green-and-brown-

mottled, with fewer hooks and spines on their exoskeleton than most meadowhawk species, and with a pair of stripes along the top of the abdomen (for a picture, see https://nhm.org/nature/taxonomy/term/458). The naiads grow fast, feeding underwater for less than two months (according to one Minnesota source, they may fit two broods into an especially long summer). Naiads hunt by sitting still in the debris on the bottom of the pond and ambushing small aquatic invertebrates as they swim by (and tiny tadpoles and fish, too), until one fine evening when they crawl out of the water to complete their transformation into adults.

Second, these are migratory meadowhawks that repopulate the North Country in spring. While most of their meadowhawk cousins appear after mid-July and fly through the first frosts, Variegated Meadowhawks arrive, as this one did, as early as mid-April, in the wake of the migrant Common Green Darners. Karl Legler, in Dragonflies of Wisconsin, says that "*hot days in spring with southerly winds bring them into the state*." In some parts of their range, they are the first dragonflies on the scene. Sightings peak during their spring arrivals and their late summer departures, but Variegated Meadowhawks continue to drift into Wisconsin from the west throughout the summer. Most Variegated Meadowhawks seen here in spring are adults, but most of those seen in fall migration are juveniles.

Teneral Variegated Meadowhawk (*Sympetrum corruptum*)

Variegated Meadowhawks have been recorded in 43 states plus the southern tier of Canada, but they are far more common west of the Mississippi and are considered vagrants or migrants east of the Big River. In Wisconsin, they are listed from almost 30 counties.

At the end of their season here, do the young Variegated Meadowhawks go back west where their parents came from? The story is a bit muddy. Western Variegated Meadowhawks move south along the Rockies and the Pacific coast. By late August, some of the juveniles that were produced here will head more-or-less south through the Midwest, but others turn toward the Atlantic (it's not just birds that follow the Kittatinny Ridge past the Hawk Mountain lookout). In the company of Green Darners and Black Saddlebags, Variegated Meadowhawks may migrate along the East coast as far south as Honduras and Belize (and they occur, inexplicably, in Southeast Asia).

They migrate close to the ground, navigating visually and using the position of the sun, and they leave behind no eggs or young to overwinter in Wisconsin waters.

The spring generation heads north immediately after becoming adults (populations vary from year to year). It has been suggested that this migratory habit could give the Variegated Meadowhawk an edge during a period of climate change.

Of the 326 species of Odonates listed for North America, 16 are regular migrants, and a few others may take sporadic jaunts. Variegated Meadowhawks are one of five species censused in a Citizen Science project run by the Xerces Society/Migratory Dragonfly Partnership (http://xerces.org/dragonfly-migration/migration-monitoring/). And, as always, Dragonfly Woman would like you to report feeding and migrating dragonfly swarms to her at https://thedragonflywoman.com/dsp/report/.

If you just can't get enough pictures of this dazzling dragonfly, see: http://faculty.ucr.edu/~chappell/INW/arthropods/meadowhawk.shtml, and this beautiful site dedicated to meadowhawks: http://meadowhawks.info/index.html

Go outside – chase some dragonflies.

The BugLady

As the *BugLady*, Kate Redmond's mission statement is "Less stepping on bugs." She hopes that people will be wowed by the beauty and intricacy of bugs. She's happiest when she's taking pictures, preferably in a wetland.

See the Bug o 'the Week archives at http://uwm.edu/field-station/category/bug-of-the-week/

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 - 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. (Omits several species found only in the southern-most counties - out of print but useful if you can find a copy at a reasonable price.)

· Mead, K. 2009. ***Dragonflies of the North Woods***: 2nd Edition. Kollath-Stensaas Publishing; Duluth, Minnesota. 193 pp. 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

· Tennessen, Ken. 2010. ***Waushara County Dragonflies and Damselflies****:* 32 pp. (Available from the author: ktennessen@centurytel.net).

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