

# MINNESOTA ODONATA GAZETTE

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Welcome to the (long-awaited) first ever Newsletter of the Minnesota Odonata Survey Project (MOSP). For a full explanation of the MOSP and why it is such an important project, please see the article, below.

The people behind the MOSP include me, Kurt Mead, Dianne Rowse, lots of volunteers who attended MOSP workshops in 2007 and a few skilled Odonatologists who have been roped into helping us out with some big tasks.

I am the founder and coordinator of the survey. There is an article on the website, [www.mndragonfly.org](http://www.mndragonfly.org) giving you way more info about me than you care to read, so I'll say no more, here.

If you haven't done so, please visit the MOSP website as there is a great amount of information just waiting to be read.

Kurt Mead

## Introducing Dianne!

MOSP Coordinator, Kurt Mead, will soon be on a year-long adventure with his family in Sweden. During that time, Dianne Rowse will be taking over, conducting workshops during the 2008 season. She's a great naturalist and we're lucky to have her on board!

Let me introduce you to Dianne...

**Dianne Rowse has 21 years experience as a professional naturalist for the Three Rivers Park District in the Twin Cities. She has been training volunteers for the dragonfly survey in Carver Park Reserve since 2000. She also worked for eight years for the Dakota County Wetland Health Evaluation Project. Dianne got hooked on dragonflies at the 1991 meeting of the Dragonfly Society of America, and it has been a passion ever since.**

## What is the MOSP and Why Do We Need It?

Please don't panic, folks, but there's a black hole perched over SW Minnesota. This is no ordinary, garden variety quantum singularity, but an entire region of missing Odonata (dragonfly and damselfly) data. Have no fear; the Minnesota Odonata Survey Project (MOSP) is here!

The MOSP is a MN DNR funded project, (funded for two years, starting on July 1<sup>st</sup>, 2007) which has a goal of filling in the dragonfly and damselfly range maps for Minnesota. As things stand, now, there

is no Odonata database specifically for Minnesota and there has been very little work on determining the ranges of these magnificent creatures.

Minnesota has long been considered, among North American Odonatologists, to be one the most under-surveyed and most interesting states.

No one has been able tell me why Minnesota is so poorly studied but I have one idea of my own. Historically, there have been very few colleges or universities in Minnesota with professors who

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## Incredible Support from the Minnesota DNR

The official acknowledgement of the funding for this project reads as follows:

***Support for this project was received from the USFWS State Wildlife Grants Program, the Minnesota Game and Fish Heritage Enhancement Fund, and the Minnesota Nongame Wildlife Fund through the Minnesota Department of Natural Resources, Division of Ecological Resources.***

The actual acknowledgement, from my point of view, belongs in large part to Rich Baker of the DNR Natural Heritage and Nongame Research Division.

He has been extraordinarily helpful in acquiring the funds for the survey, as well as directing our priorities in a way that our results and our work will be of most value in the future. He is also beating the bushes within the DNR to find people who have an interest in this field with the aim of providing them with training and resources to assist in this work.

Did I also mention that he was very patient with my inability to truly grasp the intricacies of the grant writing process? Thanks, Rich!

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## Dragonfly Haunts and Ghosts of Dragonflies

By Dianne Rowse, MOSP Interim Coordinator and Interpretive Naturalist at Lowry Nature Center, Three Rivers Park District

*Reflections on the 2002 season...*

I am preoccupied by the vivid memories of last year's dragonflies. Each time I walk down the now frozen trails, I can clearly picture the individual dragonflies that I became intimately acquainted with during spring, summer and fall.

Last spring, on April 20, I felt my heart leap with joy at the site of the first two Green Darner dragonflies. They were likely migrants who spent the previous winter in Texas. Scientists think some of our Green Darners migrate, and some of them don't. Up at Hawk Ridge in Duluth, the American Kestrels time their fall migration to coincide with that of the Green Darners: food for the feathered! Over the past four years, the first Green Darners were observed at Lowry Nature Center, about 25 miles west of Minneapolis, in Carver County between April 20th and 28th. This is also the time to hear leopard frog and chorus frog songs.

As I approach the frozen pond near Lowry called Dragonfly Pond, I step cautiously, remembering the mass-emergence of the Beaverpond Baskettail dragonflies last May 17th. Hundreds of nymphs crawled out of the water onto the shore at 10:30 a.m. to bask in the sun on every available grass stem or twig. There they emerged as shimmering-

winged adults, vulnerable to the attentive Kingbirds and Blue Jays on nearby perches. These Baskettails are among the earliest emerging dragonflies in the spring. I wonder how the nymphs are able to synchronize their day of emergence so well.

In mid-June, there was an abundance of dragonflies and damselflies in the tall grasses around Dragonfly Pond, Crosby Lake, and the parking lot. I recall the peculiar sight of many small Blue Dasher dragonflies; each perched on a sunny twig tip of a dead shrub at the parking lot edge. They have a habit of lowering their wings to shade their thoraxes. I think of them each winter morning as I walk past that shrub.

Other dragonflies I remember from June and July are the remarkable Widow Skimmers, ferocious Eastern Pondhawks (especially the one that bit me as I held it!), Ebony Jewelwing damselflies, and a variety of Meadowhawks. I saw Green Darners and Bluet damselflies laying eggs in Crosby Lake and Twelve-spotted Skimmers patrolling territories. Now when I stroll down that wintry path to Crosby Lake, I feel the spirits of these extraordinary insects.

Wading with children in Dragonfly Pond in

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## New Discoveries in Northern Minnesota

By Jim Lind, MOSP Volunteer

During the summer of 2007, I was lucky enough to combine my "day job" (conducting early-morning bird surveys) with dragonfly and damselfly surveys across northern Minnesota. Chippewa National Forest (NF) personnel wanted to know what Odonata species occur on lands under their management, so I was contracted to conduct an Odonate inventory of the wetlands on the Forest. The inventory was a combination of sampling for adults and exuviae (shed "skins" of larvae left along the water's edge after emergence) in ten different wetland habitats, including rivers, lakes, beaver ponds, and lowland bogs. Like many areas of Minnesota, the Chippewa NF is relatively undersurveyed with many opportunities for new discoveries.

Adults of 67 species were detected within the Chippewa NF, including 47 dragonfly and 20 damselfly species. Three additional species were found only as exuviae (Cyrano Darner, Cobra Clubtail, and Pronghorn Clubtail). This represents over half of the 130 or so species of Odonata ever recorded in Minnesota. At least 17 Odonate species were added to the Chippewa NF list, and at least 43 new county records were documented within Cass, Itasca and Beltrami counties. Small river sites had the highest number of species detected (37 species), followed by poor fens (27 species), bog-rimmed ponds (27 species), and large rivers (20 species).

Some of my favorite finds from the Chippewa NF included:

- Elfin Skimmers (less than an inch long!) at a small bog-rimmed pond south of Bigfork in Itasca County - westernmost record for Minnesota). One of the 20+ present was trapped in a carnivorous sundew plant.
- Zebra Clubtails emerging at the Rice River, Itasca County - third record for Minnesota.
- Cyrano Darner exuviae at the Turtle River (Beltrami Co.) and the Boy River (Cass Co.), representing the 3<sup>rd</sup> and 4<sup>th</sup> documented locations for this species in Minnesota. Identifying these and 800+ other exuviae during January was an excellent cure for the winter doldrums.
- Alkali Bluets along the shore of Lake Winnibigoshish - second record for Minnesota.
- Amber-winged Spreadwings (more than twice the size of an Elfin Skimmer!) at a sedge meadow in Beltrami County.

I also collected exuviae throughout other areas of northeastern Minnesota, including the Superior National Forest. Some highlights included:

- Cyrano Darners at Lake Jeanette along the Echo Trail (St. Louis Co.). Adults were also vouchered here in 2007 and in 2006, representing the first documented adults in the state.
- Lake Emeralds at two lakes in the Sand Lake Peatlands (Lake Co.) as well as at Lake Jeanette. Very few records exist for this species in Minnesota.
- Eastern Least Clubtail on the Stoney River in Lake County - second record for Minnesota (collected by Dave Grosshuesch).
- Subarctic Darners at the Baptism River headwaters in Lake County - found during the Minnesota Dragonfly Gathering field trip.
- Zebra Clubtail on the Sucker River in St. Louis County - 4<sup>th</sup> documented location in Minnesota.
- Green-faced Clubtails at the Vermilion River and the Sucker River in St. Louis County. This is one of the five dragonfly species on the Minnesota DNR list of Species of Greatest Conservation Concern.
- Stygian Shadowdragons at several rivers and lakes in northern St. Louis and Lake Counties. This crepuscular species is rarely seen as it is typically on the wing only for about a half hour at sunset, but it may be more common than is thought.

If anyone would like more information about the Chippewa NF inventory work, I have a detailed Forest Service report that I would be happy to share. I can be reached at: [jslind@frontiernet.net](mailto:jslind@frontiernet.net) or 218-834-3199.



A teneral Lake Emerald (*Somatochlora cingulata*) hanging from a soon-to-emerge larva hanging from an exuvia.  
Photo by Jim Lind

### *What and Why* from page 1

were Odonatologists. Back in the 50's and 60's, there were people doing some work at Gustavus Adolphus and St. Cloud State and some small amount of work has been done through the U of M. The list of people doing any major work pretty much ends there. There are over 5,000 specimens in the U of M Entomological Collection (which will be catalogued by the MOSP) and a few papers and lists of historical records have been published, more recently, but that's about it.

I've said it before and I'll say it again; Minnesota is a darned neat place to look for critters, dragonflies and damselflies included. Many eastern species have their western-most limits in the Upper Midwest. The same holds true for species considered to be primarily western, southern and northern in their distributions. East meets west and north meets south right here, with the center of this phenomenon focused pretty neatly in central Minnesota. And here we sit, embarrassingly under-surveyed.

Ironically, the best known, Odonatologically-speaking, region of Minnesota is also considered the most remote. Northeastern Minnesota counties have the highest Odonata species counts and the fewest obvious gaps in species lists. Lake County has had 56 dragonfly species and 17 damselfly species reported for a total list of 73 species of Odonates. Let us move to the southwestern counties for an enormous contrast.

Jackson County has three dragonfly species

The DNR Nongame Program, annually, produces a poster to promote the Nongame Tax Checkoff and to educate the public about some Nongame critter of interest in Minnesota. This year they plan to do a dragonfly poster which will also help promote the MOSP!



Calico Pennant  
*Celithemis elisa*

recorded, Murray has two and Lincoln and Nobles Counties both have one species of dragonfly known to exist there. Note that I have said nothing about damselflies, as there is nothing to say. No one has ever recorded a single damselfly from those counties. Ever. This is not an unusual situation in Minnesota. Mower County in the southeast has no records of any Odonates. There are many instances of counties with inadequate records in Minnesota, including some Metro Region counties.

Why is this a problem? The Odonates, being aquatic creatures for most of their lives, are very susceptible to land development, agricultural practices, logging pressures and, ultimately, global climate change. Undoubtedly, there have been some local populations already affected by the above factors. That said, we have no baseline of data to even make a guess about these effects.

Enter the MOSP.

How many times in the last year were there new county records established in the Minnesota birding community? There were a few, I'm sure. Without even really trying, and while working in the well-surveyed Arrowhead region, I have had years with more than a dozen new county Odonate records. In many Minnesota counties, every dragonfly or damselfly that is encountered will be a new record and those submissions will expand their ranges and our understanding of Odonate distribution in Minnesota.



*Haunts and Ghosts* from page 2

early August, I found translucent treasures hung on dozens of plant stems. They were the cast-off exuviae (skins) of Darner nymphs! I learned to identify what dragonfly family the exuviae were from by looking at the labium (mouth part) with a magnifying lens. The ghosts of dragonfly nymphs were a clue to the abundance of emerged adults.

The most remarkable dragonfly I met was the Yellow-legged Meadowhawk basking on a boardwalk on November 16th! The temperature was in the 60's that day. This species is known to have the latest flight period, but I think this individual was pushing the limits.

I've read that the nymphs spend from one to seven years in the pond, which makes them good water quality indicators. In January, driven by my insatiable curiosity, I chiseled several holes in the ice on Dragonfly Pond to look for hibernating dragonfly nymphs at the bottom of the pond. Well, I didn't find any sign of invertebrate life that

day. Maybe they're in deeper water or deeper in the mud than I sampled: a continuing mystery!

Would you like to help uncover the mysteries of the dragonflies? We're looking for volunteers to participate in dragonfly surveys throughout Minnesota. The surveys are part of a larger effort to involve citizen scientists in collecting information that can be used to document the species present. Please see the Minnesota Odonata Survey Project website if you are interested in helping with the dragonfly surveys: [www.mndragonfly.org](http://www.mndragonfly.org)

Now I'm anxiously awaiting that first Green Darner in April, as the miraculous life cycle of dragonflies continues.


## What to do? What to do?

Anyone interested in submitting records to the MOSP should do some or all of the following:

1. Check out the MOSP at [www.mndragonfly.org](http://www.mndragonfly.org) for general info and specifics on how to conduct surveys and submit records and specimens.

2. Attend one of the five MOSP training workshops to be held throughout Minnesota. Dates and locations (as they become available) will be posted on the website.

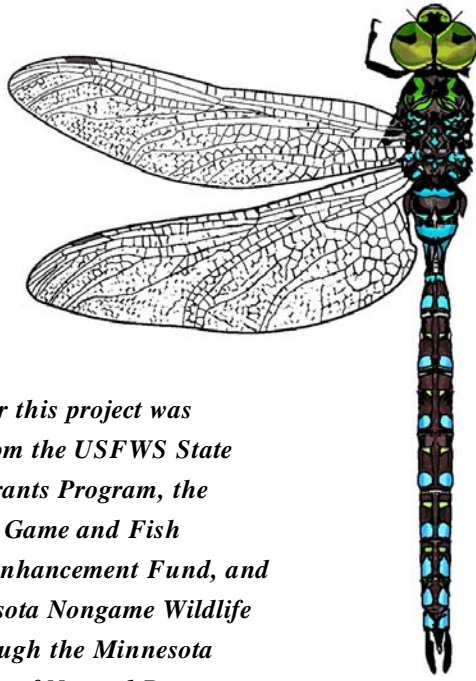
3. Contact us at the email address on the website to get on our database of volunteers. There will be email announcements, newsletters, etc, periodically.

4. Brush up on your dragonfly and damselfly ID skills, then gather in packs of similarly-minded folks and head out into the wilds (or your backyard). Teach each other what you know and figure the rest out. Be resourceful with field guides and the internet and ask questions of those with more experience. 

The old saying, "Many hands make light work" applies directly to our situation.

Our hope is that there will be many hands, in Minnesota, all adding a little bit to our knowledge of the Odonata of Minnesota. The result, hopefully, will be a better understanding of these charismatic insects in Minnesota.

5. Go to the OdonataCentral website at [www.odonatacentral.com](http://www.odonatacentral.com) (there is a link to this on the MOSP website) and look up the list of known species for your county. I have printed out the data for all Minnesota counties (no small task) and I carry them around in a large three-ring binder. Consider doing so for any and all counties to which you regularly visit, as well as some of the surrounding counties, just in case.



# Minnesota Odonata Survey Project

*Support for this project was received from the USFWS State Wildlife Grants Program, the Minnesota Game and Fish Heritage Enhancement Fund, and the Minnesota Nongame Wildlife Fund through the Minnesota Department of Natural Resources, Division of Ecological Resources.*

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