

in this issue

- Feedback from our volunteers
- Data summaries
- New projects, partners, & resources
- The action in Mexico



MIGRATORY DRAGONFLY PARTNERSHIP

Taking Flight Citizen Science Annual Report

Message from the Project Coordinator's desk.....

2013: a year of new volunteers, new partnerships, new data, and new ideas!

It was a year of activity and expansion for the MDP in 2013. During this year, the number of MDP volunteers as well as the number of Pond Watch and migration records submitted showed a more than 2.5-fold increase. We also conducted twice as many short courses to engage and train new volunteers across the US and in Canada. We forged new partnerships with groups such as Master Naturalists and the Hawk Migration Association of North America (HMANA), and reported on our data at scientific conferences.

In this issue you'll find out more about the data that's been collected and where it comes from, discover how bird-watchers are getting hooked on dragonflies, and what changes you and your fellow volunteers have asked for to make it easier to collect dragonfly



Celeste Mazzacano leads a short course in Petaluma, CA, by Judy Adler.

data. You'll also get a look at plans for 2014, including additional short courses and training videos as well as new resources for identifying Common Green Darner exuviae.

Thanks for making 2013 such a success, and stay with us on the journey in 2014!

Looking Ahead in 2014

After a seemingly endless winter, the first dragonflies of the year are waking up (or flying in) to Texas, California, and Florida, and dedicated Pond Watchers are already out scrutinizing their sites for those important "first of the year" records. As you resume your dragonfly-watching activities, be on the lookout for new MDP resources, including backyard habitat installation guidelines, a new project to investigate the details of Common

Green Darner life history by collecting and reporting on exuviae, improved website data entry, more Spanish-language resources, and new training videos to help you navigate the website. The data collected through the past two years is already giving us new insights (and raising additional questions) about dragonfly migration. With so much still to learn, we hope you will all join us again at the pond and keep your eyes on the skies in 2014!

2013 citizen science stats

MOST-RECORDED SPECIES
VARIEGATED MEADOWHAWK



MOST REPORTS SUBMITTED
M. BEHRENS OF TEXAS - 222 RECORDS!!

MOST STATE RECORDS
MINNESOTA - 362!!!



MOST COUNTY RECORDS
SHERBURNE CO. - 266!!

Banner photo: Dan Jackson
Sidebar photo: John Abbott



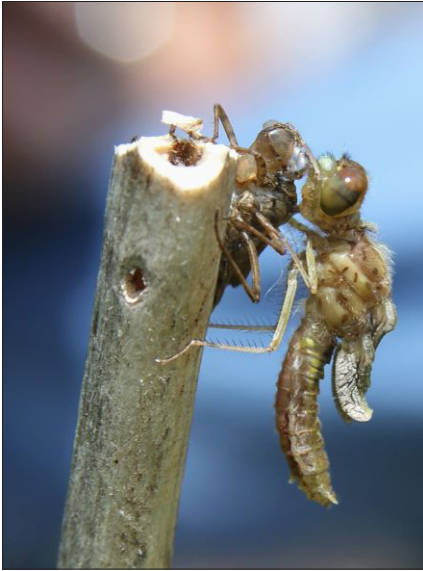
The Migratory Dragonfly Partnership uses research, citizen science, education, and outreach to understand North American dragonfly migration
dragonfly@xceres.org • www.migratorydragonflypartnership.org

CONNECT WITH MDP



Volunteer Participation Grows

Like a newly-emerged dragonfly expanding its wings, MDP's volunteer base has expanded greatly since our website and short course trainings were first launched in 2012. We are inspired by the increased numbers of participants who reported their observations in 2013, and hope this is a trend that will con-

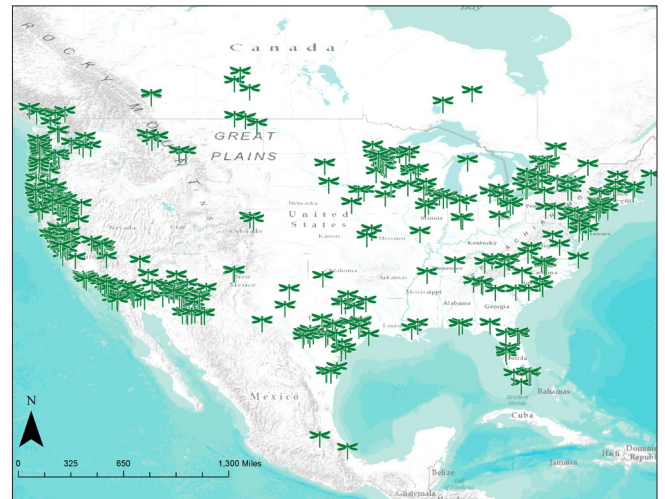


Emerging dragonfly. Photo by Peg Serani.

tinue into the future.

Pond Watch remains popular among organizations interested in place-based learning and volunteer opportunities, especially Master Naturalists and Friends groups affiliated with wildlife refuges. These groups joined forces in 2013 in a short course at the Sherburne National Wildlife Refuge in Minnesota, engaging so many enthusiastic volunteers that Minnesota led the continent in number of records submitted in 2013, with the greatest number coming from Sherburne County! Pond Watch projects are mutually beneficial to the MDP's goal of ensuring long-term data collection at dedicated sites and to organizational goals of encouraging volunteer engagement in place-based learning activities.

Monitoring these charismatic and beautiful insects is an effective way to engage people with nature and inspire them to be-



2013 MDP participation across North America. Map by Michele Blackburn.

come better stewards of their environments. If you are interested in organizing a volunteer effort to collect long-term data at a park, nature center, wildlife refuge, or other natural area in your region and would like help to get started, please contact dragonfly@xerces.org.

MDP participants have registered 184 sites across North America!

Partnerships in Migration Monitoring

MDP Partners rally to increase understanding of dragonfly migration

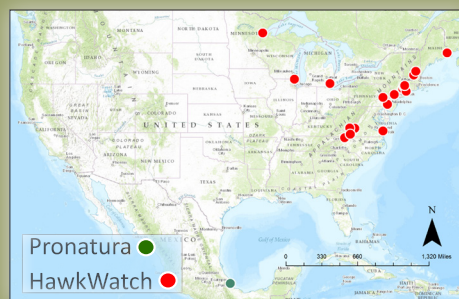
Hawk Migration Association of North America (HMANA)

- ✧ The association between migrating birds and dragonflies in the sky has led to a partnership on the ground between the MDP and HMANA.
- ✧ In 2013, 18 HawkWatch sites along the US eastern seaboard, Midwest, and Ontario, Canada formally incorporated dragonfly counts into their fall hawk monitoring.
- ✧ An impressive 850 dragonfly migration records were collected by 31 observers in the US and Canada in 2013.



Fall dragonfly migrations are sporadic and discontinuous, but hawk observers across North America have frequently noted the concurrent movement of thousands of migrating dragonflies.

HawkWatch and River of Raptors observers are ideally situated to note the timing, abundance, and identity of dragonflies flying south during their fall migration.



Pronatura and HawkWatch locations collecting migration data in 2013.

Pronatura Veracruz, Mexico River of Raptors

- ✧ Over the course of many years of raptor observations, Pronatura partners noted the regular concurrent movement of migrating dragonflies from August through October.
- ✧ Over 2,400 dragonfly migration reports were collected by Pronatura staff in 2013 during the fall migration season along the Gulf coast of Mexico!
- ✧ These data will be analyzed with other migratory reports from citizen scientists to understand connectivity between migratory populations throughout North America.



Migrants of a Feather Flock Together: MDP Partners With HawkWatch

It's no secret that people who gather every year to watch the annual bird migration in North America are also likely to see flights of migrating dragonflies moving south at the same time and along many of the same routes. Indeed, birds such as Mississippi Kites have been noted to make quite a meal of the surrounding dragonflies! With this in mind, early in 2013 MDP approached the Hawk Migration Association of North America (HMANA) to see if we could work together to include dragonfly monitoring at HawkWatch sites that were interested in participating. The HMANA board was interested in the idea, as they knew many of their HawkWatchers already informally recorded data on migrating dragonflies, in some cases for years, and they were eager to have that data put to use.

The MDP Project Coordinator worked with HMANA staff Laurie Goodrich, Julie Brown, and Jason Sodergren to develop a dragonfly protocol and data sheet that could be incorporated into the existing HawkWatch monitoring scheme and database, and in Fall 2013, 18 HawkWatch sites signed up to have the dragonfly data entry fields added to their site reporting database. By the end of the



American Kestrel, one of the many species of migrating birds counted by hawk watchers. Photo by Celeste Maz-zacano.

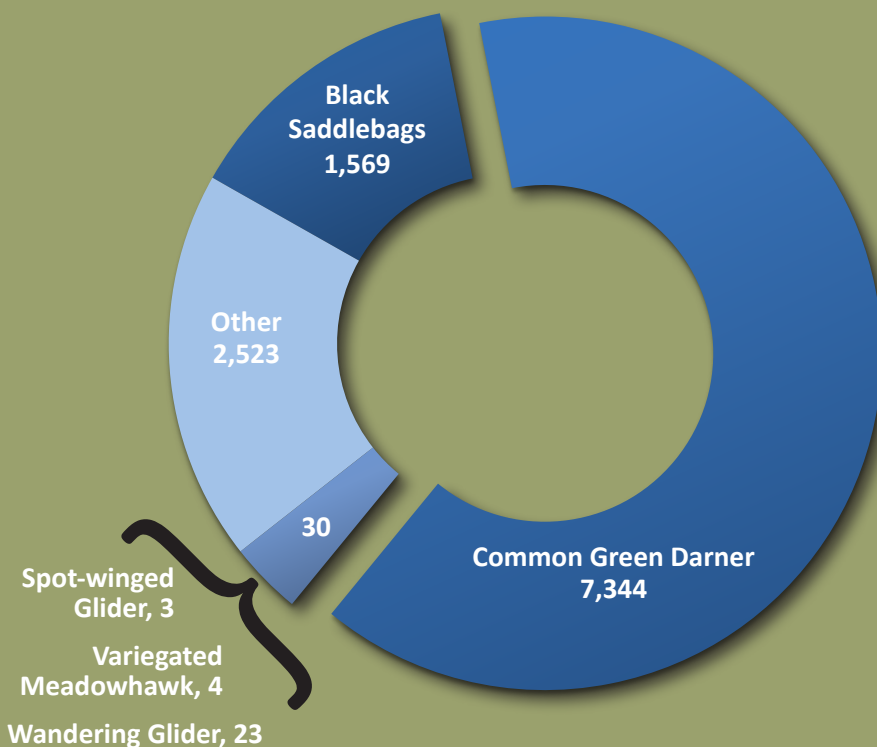
If you are a HawkWatch participant (or you know someone who is!) and would like to find out more about how to add dragonflies to the official site counts at a HawkWatch station, please visit <http://www.hmana.org/migratory-dragonfly-partnership>, or contact HMANA monitoring site coordinator, Julie Brown at brown@hmana.org.

migration season, 850 records had been collected.

Feedback from participating observatories has been positive, and has also included suggestions about ways to modify the data collection protocols a bit to make it easier for hawk watchers to incorporate into their regular counts. The MDP Project Coordinator has been invited to give a presentation on dragonfly migration at HMANA's 40th anniversary conference this spring, and we hope to be able to get even more hawk watchers hooked on dragonflies in time for the 2014 migration season.

The MDP would like to express our thanks to all the people at HMANA who worked to add dragonfly counts to the HawkWatch data collection system, and to the observatories that participated in 2013! Thank you to the following observatories: Botsford Hill; Carter Hill; Chestnut Hill; Cooper, Maine; Hanging Rock Tower; Harvey's Knob; Hawk Mountain; Hawk Ridge; Holiday Beach Conservation Area; Illinois Beach SP; Kiptopeke; Lighthouse Point; Mahogany Rock; Middle School; Pack Monadnock; Rocky Knob; Rose Tree Park; and Wildcat Ridge.

2013 HawkWatch Dragonfly Migration Data



✧ **HawkWatch Observers:** 31 Individual HawkWatch observers collected dragonfly migration data.

✧ **Observatories:** 18 observatories participating include locations on the east coast of the US and two Midwestern states, as well as one location in Ontario, Canada.

✧ **Numbers:** HawkWatch observers reported almost 11,500 dragonflies passing through their sites from August through October 2013.

✧ **Who did they see?:** The majority of dragonflies seen migrating were Common Green Darner and Black Saddlebags. Other species seen were Twelve-spotted Skimmer (*Libellula pulchella*) and Autumn Meadowhawk (*Sympetrum vicinum*). A small proportion of flights were made up of Wandering Glider and Spot-winged Glider; with a few sightings of Variegated Meadowhawk, an eastern vagrant.



Turkey Vultures are one of the main migratory species in the annual Rio de Rapaces. Photo by Celeste Mazzacano.

Dragonfly Migration in Mexico

Pronatura Veracruz is a southeastern branch of the nation-wide NGO that works for the conservation of Mexico's natural resources. It is perhaps best known for its annual Rio de Rapaces (River of Raptors), as millions of migrating raptors stream south each fall. Pronatura Veracruz has been an MDP partner since our inception, because—you guessed it—tens of thousands of dragonflies are seen migrating along with the birds each year.

Pronatura Veracruz has been counting raptors since 1991 and making informal notes of dates with large numbers of dragonflies, but with the creation of MDP, daily dragonfly counts have also been done since 2011. Staff are also conducting outreach about dragonflies and wetlands at their observatories and regional environmental education events.

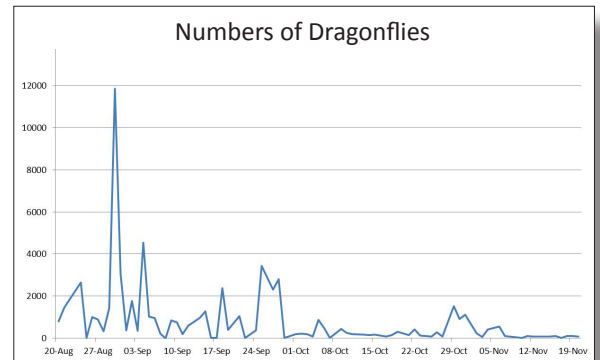
The data collected by Pronatura represents the southernmost point of MDP data collection in North America, although dragonflies are still continuing further south. It is interesting to note that neither of the cities in which dragonflies were monitored (Cardel and Chichicaxtle) are located directly on the coast, but rather are some miles inland.

As you can see in the accompanying graph, migration begins around the middle of August and can continue even into Novem-

ber, although the numbers are highest in August and September, with a peak in 2013 on August 30. Within that span, some days see enormous spikes in the number of passing dragonflies while others have no activity at all.

The species composition of the migratory flights can vary from year to year as well. In past years, huge flights of Common Green Darners have been observed, but in 2013, the largest flights were comprised of Spot-winged Gliders and Wandering Gliders. This is interesting, because we know from other observations made by MDP volunteers along the east coast that large flights of Common Green Darners were seen on multiple days passing south through sites such as Cape May, New Jersey. Did those darners stop for the winter somewhere in northeast Mexico? And what about the migrants that pass south along the West Coast, mainly Variegated Meadowhawks—do they spend the winter in California, or continue on into Mexico?

Questions such as these have highlighted the need to increase the network of MDP observers in Mexico, and we are reaching out to additional partners. In July 2014, MDP steering committee members will be working with Espacios Naturales y Desarrollo Sustentable (ENDESU) and Pronatura Yucatan Peninsula to conduct two full-day workshops in Tabasco and the Yucatan to reach out to new audiences among area universities, entomologists, non-profit organizations, and the general public. These areas are of particular interest as they represent a logical extension of the migrants' pathway after passing through Veracruz, and they are known sites of active bird migration. In addition, these regions are full of wetlands that may be used by resident mem-



Number of dragonflies counted flying past the Pronatura observatory tower in Chichicaxtle, Veracruz during the 2013 migration season.

bers of migrating species as well as migrating (and overwintering?) individuals.

Establishing monitors at these sites will give us a more complete picture of migration activities and pathways along the east coast of North America, from Canada to the extreme southeastern parts of Mexico. We also hope to develop relationships with additional new partners in the western parts of the country, such as Baja and Sonora, to investigate the continued southward movements and potential overwintering grounds of our main western migrant, the Variegated Meadowhawk. Muchas gracias a todos sus colegas nuevos!

Map of MDP partner locations within Mexico.



Pronatura Veracruz staff lead environmental education events about dragonflies for children in the area. Photo by Elisa Peresbarbosa-Rojas.

Short Courses Across North America

Our second year of Migratory Dragonfly workshops began with a springtime trio of courses in Zimmerman and Brainerd, Minnesota and Chicago, Illinois, to gear up for the first arrivals of migrating dragonflies moving back north. Although the ponds in Minnesota still had a frosting of ice, the short course in Chicago occurred within a day of the first sighting of migrant Common Green Darners. Additional courses followed in Pennsylvania, Texas, California, Vermont, and Ontario.

Over 250 enthusiastic participants learned the basics about dragonfly ecology and identification, found out how to participate in MDP citizen science projects, and took their first steps in learning how to identify the dragonflies they saw in the field.

Our participant surveys indicated that most attendees were new to the world of dragonflies, and feedback indicated a high level of engagement and learning. Participants included regional and federal natural resource professionals, educators, and staff and volunteers



Brainerd, Minnesota had yet to thaw out but it didn't cast a chill on the enthusiasm of the participants. Photo by Celeste Mazzacano.

Short courses are intended for anyone interested in dragonflies and contributing to our growing knowledge of dragonfly migration.

Over 250 participants participated in seven short courses in 2013.

from parks and nature centers. The courses have been highly attractive to Master Naturalist groups, as their participation in MDP projects can fulfill requirements for service learning projects and annual volunteer hours.

The demand for additional short courses continues, and we are currently in the planning stages for new courses in 2014. Unfortunately, the reality of limited staff time and resources means we can't give as many short courses as we would like. For that reason, we will soon be making the MDP training modules available online as a resource for people who would like to teach a course in their area, or to provide a refresher for those who participated in a course in the past.

We are also exploring the possibilities of providing "live" distance trainings via interactive webinars and/or GoogleHangouts. Stay tuned to the website and the monthly e-newsletters for continuing developments in these areas, and for announcements regarding on-site short courses that will be offered in Canada and the US in 2014!

Updates on Recent and Future Resources for MDP Volunteers

Member List: This list was added to the MDP website under the Resources tab. This list is only available to registered users of the MDP website. If you would like additional information to appear, such as your city, state, or e-mail address, so that other volunteers in your area can contact you, be sure to visit the list and edit your member profile!

Shared Localities: Pond Watch and Migration observation sites are frequently located in a much-visited area, such as a park. In addition, many nature centers and wildlife refuges have organized teams of volunteers to monitor a wetland or pond. To make it easier for different people to all report on the same site, we created a new Shared Localities option. When registering a new site, just select the check box to make it a shared locality. Other users can

see Shared Localities and add them to their own personal Locality List. And, with the new Member List option of sharing e-mail, you can even contact other site users to organize group outings, if desired.

Exuviae Guide: As described on pg. 8, we are launching a new project to more closely examine the life history of Common Green Darners. To do this, we need to know when and where nymphs are developing and emerging as adults—and that means that you need to know how to identify Common Green Darter exuviae. So, we've also added a [Common Green Darter exuvia](#) to the online identification resources (under Virtual Images). Click on the thumbnail to pull up a 3-dimensional image that can be turned and rotated to examine every aspect and angle. The new exuviae guide will

be available in the next few months, and will include instructions on how to collect, preserve, and photograph them for later identification.

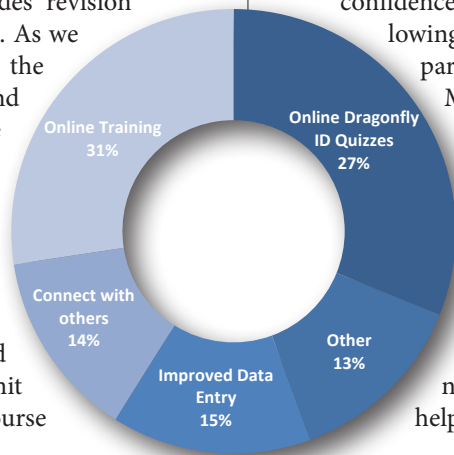
Streamlined Data Entry: We know we ask you for a lot of information in each observation, and we are continually working to make the data entry process as streamlined as possible. We are currently working on some changes that will speed up your reporting and make it more obvious which fields are required vs. optional.

Más Recursos en Español: To make it easier for Spanish-speaking volunteers to participate, both the migratory dragonfly field guide and the data entry portions of the website will be available in Spanish. Look for these versions later this summer.

MDP Year-End Survey

The MDP issued its second annual year-end survey to all registered MDP website users and short course attendees from 2012 and 2013. Over 150 participants provided feedback that is helping us determine both program strengths and volunteer needs. Your feedback helps shape our future course and guides revision of MDP tools and resources. As we prioritize these needs over the coming months, revisions and updates will be made to the website and MDP resources to make it easier for volunteers to participate over the long term in MDP projects.

Responses indicate over 50% of course participants have either submitted data or are planning to submit data this year. Our short course offerings are integral to recruiting new volunteers, and



Changes that would encourage more participation.

the MDP is pleased that results show a high level of satisfaction and engagement among participants. When asked what changes would encourage more participation in MDP projects, many respondents answered either “online training” or “online quizzes”, reflecting a consistent wish to achieve greater confidence with species identification. Following the 2012 survey, when many participants requested regular MDP updates, we implemented our monthly e-newsletters to volunteers beginning in 2013. We are still paying close attention to what you say, so this year, look for the addition of online training modules and self-directed quizzes to the MDP website. We hope these new interactive resources will help to make your participation in MDP projects even easier and more rewarding!

2014 updates

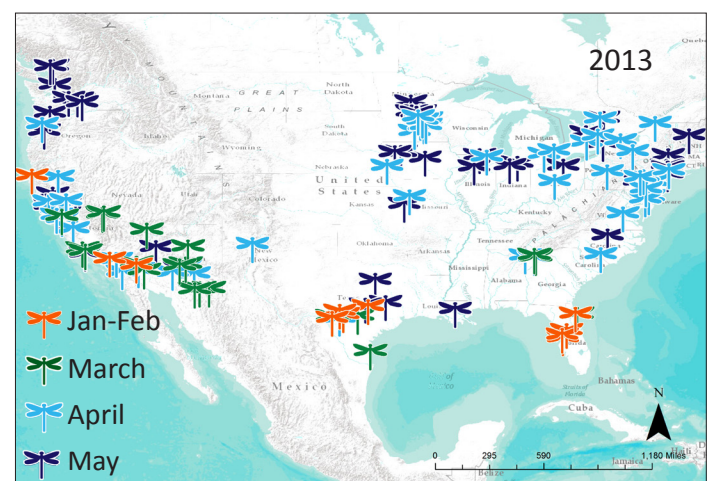
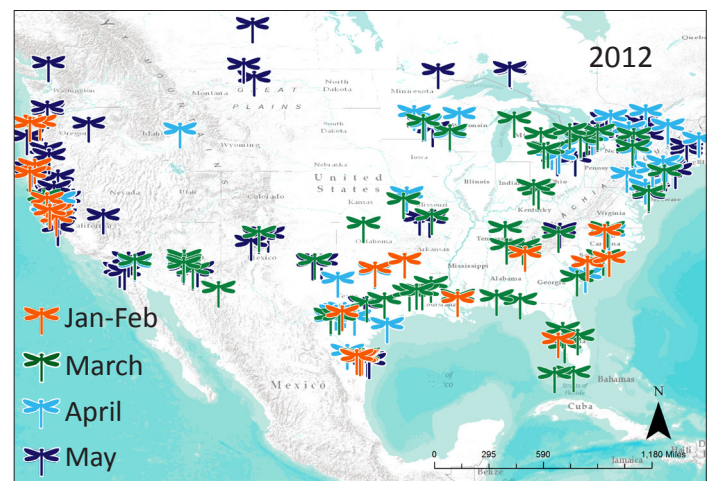
- To all participants of the 2013 MDP follow-up survey, Thank You!!
- All survey participants were entered into a drawing to win a dragonfly field guide! Congratulations to our winners, Dean K. and Tim T.
- Look for a Spanish version of the MDP Field Guide in the coming months.
- Watch for a new publication that provides guidelines for the installation of dragonfly pond habitat.
- Know of a facility that can host a Pond Watch site to collect long-term data? Email dragonfly@xerces.org

Data, Data, Data!

Data—keeping this partnership in motion and steering the course of MDP goals and our understanding of migratory timing and behaviors in North American dragonflies. The MDP and its partners alone couldn't possibly monitor all the skies and ponds throughout the extent of North America without the help of our volunteers. A total of 562 MDP users submitted 1720 Migratory and Pond Watch records to the website in 2013, over twice the number submitted in 2012. The number of migratory flights observed in 2013 increased by 700 percent compared to the previous year, while Pond Watch submissions rose by 100 percent. Variegated Meadowhawk reports rose significantly in 2013 compared with 2012, reflecting the substantial difference in migration activity between those two years.

Data from volunteers are helping the MDP understand patterns of movement for resident dragonflies versus migrants and helping us visualize the patterns of arrival for different species at observer ponds throughout North America. An unexpected warm March in 2012 coincided with a wave of early reports of adult Common Green Darner in Minnesota, Wisconsin, Ontario, and the northeastern seaboard of the US. These likely migrants are suspected to return to northern climes from southern regions at times when local weather conditions haven't yet allowed overwintering nymphs to develop and emerge as adults. On the west coast, two separate early January 2012 sightings of Variegated Meadowhawks in Oregon raised even more questions about the movement of migrants and their response to changes in climate. Are local habitat conditions responsible? Are year-to-year differences a response to changes in weather patterns? Are they overwintering further north than originally thought?

In contrast to 2012, early sightings in 2013 were isolated to southern regions of North America where odonates are regularly seen flying almost year-round. The usual suspects were not reported on the wing until April, and in many northern regions Common Green Darner, the quintessential early flier, not until May. What patterns will we see for 2014? As the northeastern US continues to thaw out from the onslaught of persistent snowy and icy winter storms, we'll wait patiently to see how migratory patterns develop in 2014 for our 5 focal species. Until then, we hope you'll continue to help tell the story of migration patterns by making continued visits to your local pond in 2014!



Dragonfly reports of our five focal species submitted in the winter and spring of 2012 (top) and 2013 (bottom). Maps by Michele Blackburn.

MDP Projects Update

An inside look into the MDP's citizen science projects in 2013 and goals for 2014

Pond Watch

Pond Watch gained significant ground in North America in 2013. The data gathered spanned the continent, from Saskatchewan and British Columbia, Canada to the Mexican state of Hidalgo, and from the San Juan Islands of Washington to Monhegan Island, Maine. Volunteers reporting the seasonality of dragonfly movements at these sites across North America are informing hypotheses about the timing and location of migration and our understanding of the relationship between migrant and resident populations within a species.

As part of our work to understand the life history of resident and migrant Common Green Darners in North America, we're adding something new to Pond Watch—the quest for exuviae! As you visit your pond this year, check out the vegetation around the perimeter for the exuviae left behind when mature nymphs leave the water to emerge as adult dragonflies—an unequivocal sign that a species is successfully breeding at your pond. These observations will help tell us about emergence timing and likely origins of adults seen at ponds at different latitudes at different times of year.

In the long-term, exuviae data collection can help us track the relationship between weather and climate change and Common Green Darner breeding, overwintering, and emergence. Because exuviae collection data can be combined with existing stable isotope data on Common Green Darners, and because the exuviae of the other four migratory species are much more difficult to identify, we are concentrating for now only on Common Green Darner exuviae. MDP has already

developed 3-D “virtual” images of Common Green Darner exuviae, and we will be sharing a field guide to identifying, collecting, photographing, and preserving Common Green Darner exuviae in the coming months.

Migration Monitoring

Migration season arrived with flights of Swamp Darners (*Epiaschna heros*) seen on the east coast in July. Additional reports of other species soon followed in the east and Midwest, but those watching western skies had to wait until Labor Day weekend for the first flights of Variegated Meadowhawks to appear along the coast (see map at right). We know little about how these flights originate and where adults overwinter; despite the presence of observers in California who were alerted to the southward meadowhawk movements, no large flights into northern California were seen. Why was so much more migration seen in the west in 2013 compared to 2012? What accounts for the earlier start to migration in the east compared to the west? Regular reporting over many years will tell the story of dragonfly migration and help identify changes in timing, frequency, or duration of migration.

Stable Isotopes

Partners at the Vermont Center for Ecostudies (VCE) are investigating the patterns of emergence and movement among migrant Common Green Darners at different latitudes throughout eastern North America. In 2013, VCE analyzed the stable hydrogen isotope signature of 1000 Common Green Darner wings and 300 exuviae.

Result thus far indicate that adults collected in Gulf coast states have large varia-



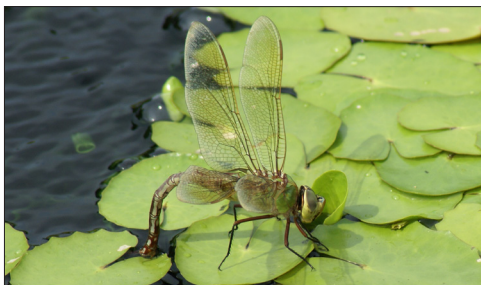
Variegated Meadowhawk (*Sympetrum corruptum*) 2012 & 2013 migratory reports. Map by Michele Blackburn.

tions in isotope signature, implying that in each month there is a wide range of locations of origin, and many adults seem to be moving up from the south even in late summer. Results from specimens collected in the far reaches of the northern part of the range look more as expected; in April, isotope signatures indicate the dragonflies originated from the far south, and by late summer, specimens collected in the north had wing isotope signatures indicating they had developed and emerged in the north.

Stay tuned for further updates and reports from the isotope project in 2014.



Partners at VCE analyzed 300 Common Green Darner (*Anax junius*) exuviae like this specimen for the stable isotope project. Photo by John Abbott.



Collecting seasonal information at local ponds provides data on life history and increases our understanding of the relationship between migrants and residents of the same species. Photo by Walter Chadwick.

dragonfly fun facts

- ✂ Color in dragonflies can change as the temperature changes, aiding in thermoregulation and camouflage.
- ✂ Dragonflies are found in almost every kind of



- freshwater habitat; one species even breeds in saltwater.
- ✂ Color development continues as a dragonfly or damselfly ages, so newly emerged and mature

- adults of the same species can look very different.
- ✂ The water a nymph pulls into its rectal gill chamber can be expelled to create jet propulsion!

march

POND WATCH!
START LOOKING
FOR DRAGONFLIES
AT LOCAL PONDS
DURING SPRING
MIGRATION.

every month

LOOK FOR THE
MDP e-NEWS-
LETTER IN YOUR
INBOX!

august

BE ON THE
LOOKOUT —
FALL MIGRATION
BEGINS THIS
MONTH.

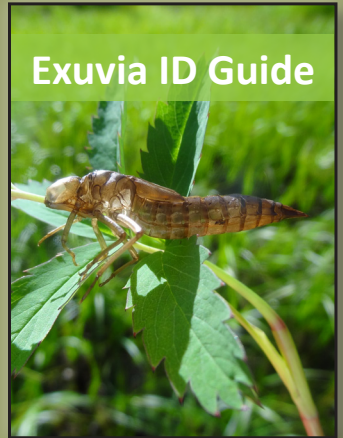


exuviae collection

ex-u-vi-ae noun plural \ig-'zü-vē-,ē, -vē-,ī\ The cast-off skins or coverings of various organisms, such as the shells of crabs or the external coverings of the larvae and nymphs of insects.

Pond Watchers, be on the lookout for Common Green Darner exuviae!

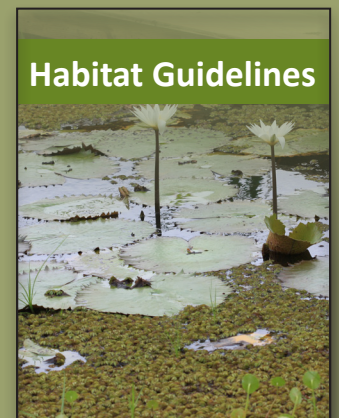
- When dragonfly nymphs leave the water to emerge as winged adults they leave behind a cast-off skin (exuvia). The presence of exuviae tells you who is successfully breeding at your pond.
- Look for exuviae attached to vegetation and hard surfaces around ponds. The MDP will soon distribute protocols for exuviae collection and an ID guide to Common Green Darner exuviae.
- Check out the newly-created virtual images of Common Green Darner exuvia on the [MDP website](#).
- Expect a new guide in the coming months that will help you identify, collect, and preserve Common Green Darner exuviae, and provide instructions for capturing diagnostic features in photos, and protocols to submit photographic or physical specimens.



create backyard pond habitat

Create a Dragonfly Pond Watch site in your own backyard!

- Backyard ecosystems are part of a network of habitats that sustain biodiversity in urban and urbanizing landscapes by providing refuges and connectivity between green spaces.
- Establishing aquatic habitat in your backyard will not only attract local odonates, constructed backyard ponds create habitat for other beneficial aquatic invertebrates and provide an oasis for birds and amphibians.
- Constructed ponds help remediate the impact of habitat isolation resulting from wetland degradation and destruction, allowing increased movement and breeding of both common and rare species.
- Look for the 2014 rollout of habitat guidelines to create your own backyard pond. They also make excellent outdoor classrooms for environmental education for students of all ages!



opportunities & events

Calling All Photos

Submit photos to dragonfly@xerces.org

Do you have photos of dragonflies or of people participating in MDP projects or short courses? Submit your photo to highlight your participation in MDP events. We'll include as many photos as possible in monthly e-newsletters.



All copy rights remain with the photographers.

Migratory Dragonfly Short Course

Friday April 25th, Sterling Nature Center
Sterling, New York

Intended for anyone interested in dragonflies and in contributing to our growing knowledge about dragonfly migration in North America. Whether you are a novice or a pro when it comes to dragonflies, please join us for this fun and informative event to become a volunteer citizen science monitor and help us explore the amazing but understudied phenomenon of dragonfly migration!

Check the MDP Events page for an agenda and registration details.

[Events Page](#)

Your Pond Could be a Shared Site!

Register your site as a shared locality

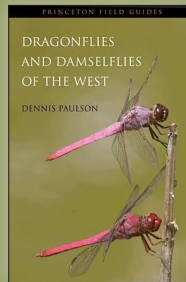
Want to connect with others in your area that share your interests in dragonfly conservation? Designate your pond as a shared site to coordinate data collection efforts or plan group outings with local dragonfly observers. Either edit an existing locality and select "Shared" or select "Shared" when entering a new locality.



Odonatists Kathy Biggs and Sandra Hunt-von Arb join forces to observe dragonflies. Photo by Celeste Mazzacano.

resources

DENNIS PAULSON'S EASTERN AND WESTERN DRAGONFLY FIELD GUIDES ARE BOTH AVAILABLE IN XERCES' ONLINE STORE



MDP'S FIELD GUIDE TO MIGRATORY DRAGONFLIES



MDP PROTOCOLS FOR CITIZEN SCIENTISTS



ADDITIONAL RESOURCES

join the conversation

SIGN UP TO NATIONAL & REGIONAL LISTSERVS AND FACEBOOK GROUP PAGES TO DISCUSS DRAGONFLIES



MIGRATORY DRAGONFLY PARTNERSHIP
628 Northeast Broadway, Suite 200
Portland, Oregon 97232, USA



www.migratorydragonflypartnership.org
dragonfly@xerces.org

Using research, citizen science, education, and outreach to understand North American dragonfly migration and promote conservation of the habitats on which they rely.

Steering Committee
Scott Black, Chair
The Xerces Society

John Abbott, Vice-Chair
St. Edward's University

Colin Jones
Ontario Ministry of
Natural Resources

Peter Marra
Smithsonian Conservation Biology Institute /
Vermont Center for Ecostudies

Mike May
Rutgers University, Ret'd

Dennis Paulson
Slater Museum of
Natural History, Ret'd

Elisa Peresbarbosa Rojas
Pronatura Veracruz

Doug Taron
Peggy Notebaert Nature Museum

Jim Chu
U.S. Forest Service International Programs

Ralph Grundel
U.S. Geological Survey

Greg Butcher
U.S. Forest Service International Programs

Project Coordinator
Celeste Mazzacano
The Xerces Society