

The Dragonhunter

Summer 2008

Newsletter of the New Hampshire Dragonfly Survey

(The NHDS is a partnership of N.H. Audubon, N.H. Fish and Game, and UNH Cooperative Extension)

Coordinator: Pam Hunt (603) 224-9909 ext 328 or
phunt@nhaudubon.org



www.wildlife.state.us/Wildlife/Nongame/dragonflies.html

Coordinator's Greeting,

Summer is slowly winding down. Darners and meadowhawks will soon become the dominant dragons in New Hampshire's fields. We are now in the third and final of the recommended three survey visits, so if you haven't let done so, pick the next sunny day and head to your chosen spot (or spots) to see what early autumn has to offer.

As soon as you're done, be sure to get me any data and vouchers (bugs or photos) so we can begin getting the 2008 data in shape. Far better to do it now while things are fresh in your head, rather than waiting for me to pester you sometime in October! I'll save any broader summary of 2008 for the fall newsletter, thus freeing up space in this one for a couple of early highlights and new announcements.

Happy hunting,

Pam

Save the Date: 2008 Season Wrap-up!!!

Last year we had a small gathering in late August to help folks with identifications from the summer. People brought specimens and photos and the experienced odophiles in attendance helped sort out what everyone was. Not only is this an efficient way to learn more about dragonfly ID, but it's a great opportunity to meet other Dragonhunters and just have a good time.

As a result, we'll be doing it again this year, as follows:

When: Sunday, September 7, from 11 a.m. to 4 p.m.

Where: NH Audubon's McLane Center, Silk Farm Rd, Concord
(take Exit 2 off I-89 and follow signs)

We will have a couple of microscopes available, and computers for viewing digital photos (including a plasma screen on the wall!). If the weather holds and we have time, we can even go into the nearby fields to look at meadowhawks (or darners in the courtyard). Come for as long as you want, and bring a lunch if you expect to be here mid-day.

Notes from the Field

At the beginning of the season, at least three observers found Spatterdock Darners in several locations in southeastern New Hampshire, including the first records for Rockingham County (Northwood and Brentwood). This species appears in late May and early June, unlike most of our other darners, and is distinctive in having bright blue eyes. I'd never seen one myself until I visited the Brentwood site in mid-June!

The highlight of early summer was the discovery of yet *another* new species for the state. On July 2, Martha Reinhardt was surveying an area of extensive wetlands in Hooksett and came up several Banded Pennants (*Celithemis fasciata*) in a gravel pit pond. This is a species of the coastal plain here in the Northeast, with records from New Jersey up through eastern Massachusetts. It is the 162nd odonate species to be documented from New Hampshire. Given Hooksett's location in the state, observers should keep an eye out elsewhere in southeastern NH in 2009!



Male Banded Pennant
by Martha Reinhardt

Meanwhile, other Dragonhunters (the people, not the insects!) have been active in the Ossipee area, portions of southwestern NH, southern Strafford County, Webster, and the mouth of the Blackwater River in Hopkinton. I've been hearing occasional reports, including some noteworthy finds, but will save most of these for the fall or winter newsletters (when pickings are a little slimmer!).

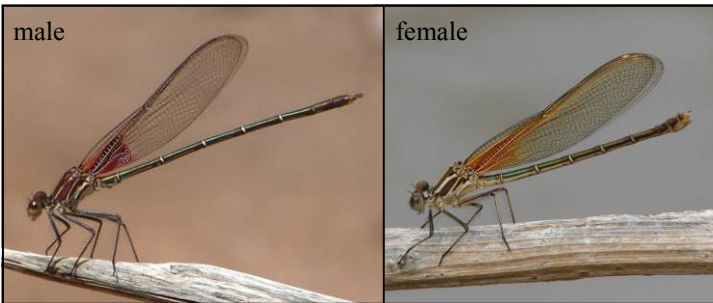
Don't forget to send in your data at the end of the season!

Bugs to Watch For!

Time for another exciting installment of this popular feature, this time focusing on a couple of late season specialties.

American Rubyspot (*Hetaerina americana*)

This attractive damselfly is found primarily on medium sized rivers with at least some low shoreline vegetation. Known sites include most of the tributaries to the Merrimack (Contoocook, Winnepesaukee, Souhegan, Piscataquog, Suncook, Blackwater), the Lamprey in the southeast, and one location along the Ashuelot in Winchester. My guess is that it occurs elsewhere, and I encourage folks to look for it in the Nashua, Cochecho, Exeter, and farther up the Ashuelot.



This is a large damselfly, only a little smaller than the familiar Ebony Jewelwing, and is easily recognized by the red or orange patch at the base of the wings. Males typically perch on rocks or overhanging vegetation, from which they fly out over the water to forage or investigate females. Flight dates for this species in New Hampshire are concentrated from August 17 to September 23, meaning the next month is prime time for adding to our knowledge of its distribution in the state!

Mottled Darner (*Aeshna clepsydra*)

Although not rare, this darner is somewhat restricted in range to the northeastern United States, where it occurs from Wisconsin to Nova Scotia. Like the rubyspot, it flies primarily from mid-August to late September. It tends to occur in a variety of ponds and bogs, and most records are from south of the White Mountains. Like all darners, catching it is a challenge, but it doesn't hurt to try. Depending on the site, most darners you catch will be some combination of Canada and Black-tipped, but Mottled can actually be quite common, and you won't know it's there unless you look!



Note the large pale blue spots on the side of the thorax, quite unlike the stripes found on most other darners.

Science Update: Dragonfly Migration

As fall approaches, you may be lucky enough to come across a mass movement of Common Green Darners. This is more likely along the seacoast or on ridgelines, where they are concentrated by winds and/or topography, but a few can be noticed anywhere. Migrating darners tend to all move in the same direction, rather than zipping back and forth like they do while foraging.

While observers have long noticed these apparent migratory movements, there has been little empirical evidence until fairly recently. Here I summarize a couple of papers presented at the last two meetings of the Dragonfly Society of the Americas.

Believe it or not, you can put a radio transmitter on a dragonfly. Martin Wikelski and his colleagues caught darners in coastal New Jersey and attached tiny transmitters weighing roughly 1/100th of an ounce (the dragonflies weigh only 5 times this!). For several days they followed the darners' movements either on the ground or from a small airplane, and related these to geography and weather.

They found that darners were behaving much like birds, in that they often waited to move until after the passage of a cold front. In addition, when reaching a large water body like Delaware Bay, they turned north to cross at a narrower point before continuing south. On average, radioed insects traveled 35 miles in 6 days, with a maximum of 90 miles. The overwhelming direction of movement was to the south, as illustrated in the diagram to the right.



(map from Wikelski et al. 2006. *Biology Letters*: doi10.1098/rsbl.2006.0487)

All this is cool, but where are all those New Jersey darners going in the long term? This question has recently been answered (at least partially) by John Matthews, a graduate student in Texas. He took samples from dragonflies captured along the east coast in the fall and analyzed them for stable isotopes. Simply put, the ratios of "normal" hydrogen and "heavy" hydrogen (Deuterium) in precipitation vary with latitude, with less Deuterium in the north. Organisms take in water either directly or through their prey, and as result their tissues contain an "isotopic signature" that can indicate the latitude where those tissues were formed.

Hydrogen ratios from darners caught in the eastern U.S. were similar to those of sites at 8 degrees higher latitude. In other words, those dragonflies were hatched over 450 miles to the north, and over the course of their lives had moved south. The farthest a darner appeared to move was a whopping 25 degrees, the approximate equivalent of flying from Concord to Jamaica.

So now that we're getting a better idea of how and where darners are migrating in fall, the question of what they do in spring becomes all that more intriguing!