OPERATION RUBYSPOT 2004

Statewide search for the American Rubyspot
Hetaerina americana

Prepared for the Massachusetts Natural Heritage and Endangered Species Program

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&

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Operation Rubyspot 2004

1. Introduction

Goal and Objectives

The goal of this project is to provide the data to enable the assessment of the regional status of the American Rubyspot (*Hetaerina americana*), currently a "watch listed" species in Massachusetts.

Our specific objectives include the following:

- Gather existing records during April through July that describe current knowledge of regional distribution
- Coordinate a 2004 field survey for adults during August and September in MA
    - Design educational materials to facilitate current and broaden future field participation
    - Develop network of observers who send in their sightings and strategy for collecting reports of the species
    - Train American Rubyspot team leaders and volunteers
    - Form American Rubyspot field teams who will follow up on sightings and determine population size and extent in the watershed where observed
- Gather new field season species data from regional experts in surrounding states
- Summarize current abundance and distribution of this species in Massachusetts and the region.

2. Historical Context

The current knowledge of the distribution of this species in Massachusetts is limited. Walker (1953) notes its wide distribution along cold clear streams south to Massachusetts and to our bordering states of Connecticut and New York (p.76). Westfall and May (1996) note that this species is widely distributed in the U. S. and that it stays close to the banks of rapid streams. Resources noted by Westfall and May that have additional information on this species include: Johnson (1973) on distribution; and Bick and Solzbach (1966) and Johnson (1961) on reproductive behavior. These and other sources will be reviewed for additional information on the distribution of *H. americana* .

Ohio researcher Robert Glotzhober, on the Marietta College Biology Department web site, posts that the adults of *H. americana* have been found flying between May and October http://www.marietta.edu/~odonata/species/254.html. Based on this data, we will be on the look-out for this species in known locations throughout the 2004 odonate field season. Past years studies on the Millers have not found a spring flight of this species (D. H. Small, personal communication).

Nikula, et al (2003) noted that the species is uncommon in Massachusetts and tends to be more common in southern U.S. The adults, flying in August and September, have been found in the north central part of the state in the Millers and Connecticut Rivers . Nikula also reports there were a few historical records in the south east region of the state.

These references and other texts and journal articles as well as field notes from regional experts will be our source for base-line information on this species. We have begun to collect this information and will continue over the course of the project.

The following list of county records for American Rubyspot (*H. americana*) (http://www.odenews.net/CountyCalopteryx.htm) was originally compiled by Chris Leahy, revised by Richard Forster, and has been updated by Blair Nikula, Jackie Sones, Jeremiah Trimble and others. Most records (x) are based upon specimens or, in a few cases, capture and release. Sight records have been accepted only for a few easily identified species. "H" indicates a species known only historically (pre-1950). Counties are arranged in a generally west to east, then north to south order:

x Berkshire ; x Franklin ; x Hampshire; x Hampden; x Worcester; x Middlesex; H Essex;
0 Suffolk ; H Norfolk ; 0 Bristol ; 0 Plymouth ; H Barnstable ; 0 Dukes; 0 Nantucket

3. Methodology

Under the direction of principal investigator David H. Small, Athol Bird & Nature Club (ABNC) will gather contemporary and historical records to describe American Rubyspot (*Hetaerina americana*) distribution and provide a preliminary assessment of the status of this species in Massachusetts. Staff at the Millers River Environmental Center will facilitate this data collection by phone, internet, and library research from the time of proposal acceptance. This information will assist field teams in delineating a baseline for field sites to explore during August and September.

In addition to the records from prior years that will direct this year's field work, we will develop a public outreach campaign to engage others in field observations and reporting. As noted by Nikula, the red patch in its wings is distinctive among northeastern damselflies and the male will be an easy way for novices to recognize the presence of this species. Even the casual observer can add to our base of field sightings that will be checked by the American Rubyspot teams.

Through an extensive outreach program we will gather reports of the occurrence of *Hetaerina americana* in river systems across Massachusetts. Outreach will include ABNC members plus representatives from partners working with us at the Millers River Environmental Center. For example, members of Trout Unlimited, Ducks Unlimited, Mass Audubon, and Mass Butterfly Club, and participants on these listserves; MassLep, NEOdes, NHOdes, BioMass, and participants from this year's Nymph Fest, Ode Conference and Ode Institute held at the Center represent sources for volunteer observers and team members.

To engage the public in our search for the American Rubyspot, we will design and distribute "Wanted Posters" in the form of a flyer that proclaims the American Rubyspot as the charismatic damselfly we seek. We will provide observers the reward of posting their confirmed sightings on the American Rubyspot web site we design and host. So, this public website will be answering for everyone, "Where in the Northeast is the American Rubyspot?" and the site will also provide species information, interactive reporting forms, and links to Heritage other odonate sites. In addition to posters and the public web site, we will present the project at meetings and conferences to engage other organizations in reporting American Rubyspots. During the course of this project, by "playing this game" with us, the artificial barriers between the "ivory tower" researcher and the "guy" in the field will break down as it has in other similar programs we have run.

This project will provide key data to NHESP for the re-evaluation of the status of *Hetaerina americana*. We will also engage a broad group of volunteers in the field studies and provide a model for motivating and educating citizen scientists in field survey work. As teams conduct field surveys, they will also be informed about listed species they may encounter beyond the target species. These more general field notes will be shared with Heritage during the field season as well as summarized and included in our final report.

4. 2004 Sightings Table

Date	Number		River	Location	Observers
10/6	2	2-M	Millers River	Athol, Ma	Shelley Hight
9/27	3	3-M	Millers River	Athol, Ma	Dave Small
9/23	2	2-M	Souhegan River	Amherst, NH	Pam Hunt
9/17	4	2-M 2-F	Wood River	Alton, RI	Maria Aliberti - Emily Brunkhurst
9/12	2	2-M	Deerfield River	Deerfield	Lily Serrentino, ABNC
9/12	2	1-M 1-F	Penobscot River	Lincoln, Me	Nick Castrataro
9/10	82	66-M 16-F	10-Mile River	Attleboro	D. Small, Earle Baldwin
9/10	23	19-M 4-F	Abbots Run	North Attleboro	D. Small, Earle Baldwin
9/6	4	--------	Wading River	Mansfield, Ma	Karro Frost
9/6	9	5-M 4-F	Quabog River	Palmer, Ma (Three Rivers)	Shelley Hight, Dave Small
9/6	3	3-M	Quabog River	Palmer, Ma (Rte 20 bridge)	Shelley Hight, Dave Small
9/6	11	7-M 4-F	Ware River	Palmer, Ma (Rte 181 Bridge)	Shelley Hight, Dave Small
9/6	17	12-M 5-F	West River	Dummerston Vt (Windom Cty)	Bryan Pfeiffer
9/5	4	4-M	Housatonic River	Great Barrington, Ma	Lula Field
9/4	10	9-M 1_F	Partridgeville Brook	Athol-Lake Rohunta	ABNC - Ode News
9/4	140	--------	Millers River	Athol	ABNC - OdeNews
9/1	32	27-M 5-F	Ware River	Hardwick, Ma (Gilbertville)	Michael Veit
9/1	9	6-M 3-f	Big River	Coventry, RI (same as 8/14)	Michelle St. Sauveur
8/31	32	24-M 8-F	Lewis Creek	Ferrisburgh, Vt	Sharon Riley, Bryan Pfeiffer
8/30	39	29-M 10-F	Nissitissit River	Pepperell, Ma	Michael Veit
8/30	21	11-M 10-F	Westfield River	West Springfield, Ma	Nancy Goodman
8/29	103	---------	Squannacook River	Groton, Ma	Julie Lisk
8/29	7	3-M 4-F	Westfield River	West Springfield, Ma	Nancy Goodman
8/28	8	---------	Connecticut River	Sunderland (near Montague)	Chris Gentes
8/28	22	7-M 15-F	Merrimac River	Canterbury NH	Pam Hunt
8/28	2	1-M 1-F	Westfield River	Huntington, Ma	Dave Small
8/27	70	23-M 47-F	Deerfield River by Kayak	Old Deerfield, Ma	Dave Small
8/25	354	estimated 1:2 M/F	Millers River by Kayak	Athol Ma Between Tully River and 202 Bridge	Shelley Hight, Viney Zozak, Dave Small
8/24	33		Millers River	Athol (So Athol Road)	Dave Small
8/22	2		Westfield River	West Springfield Ma	Lynn Harper

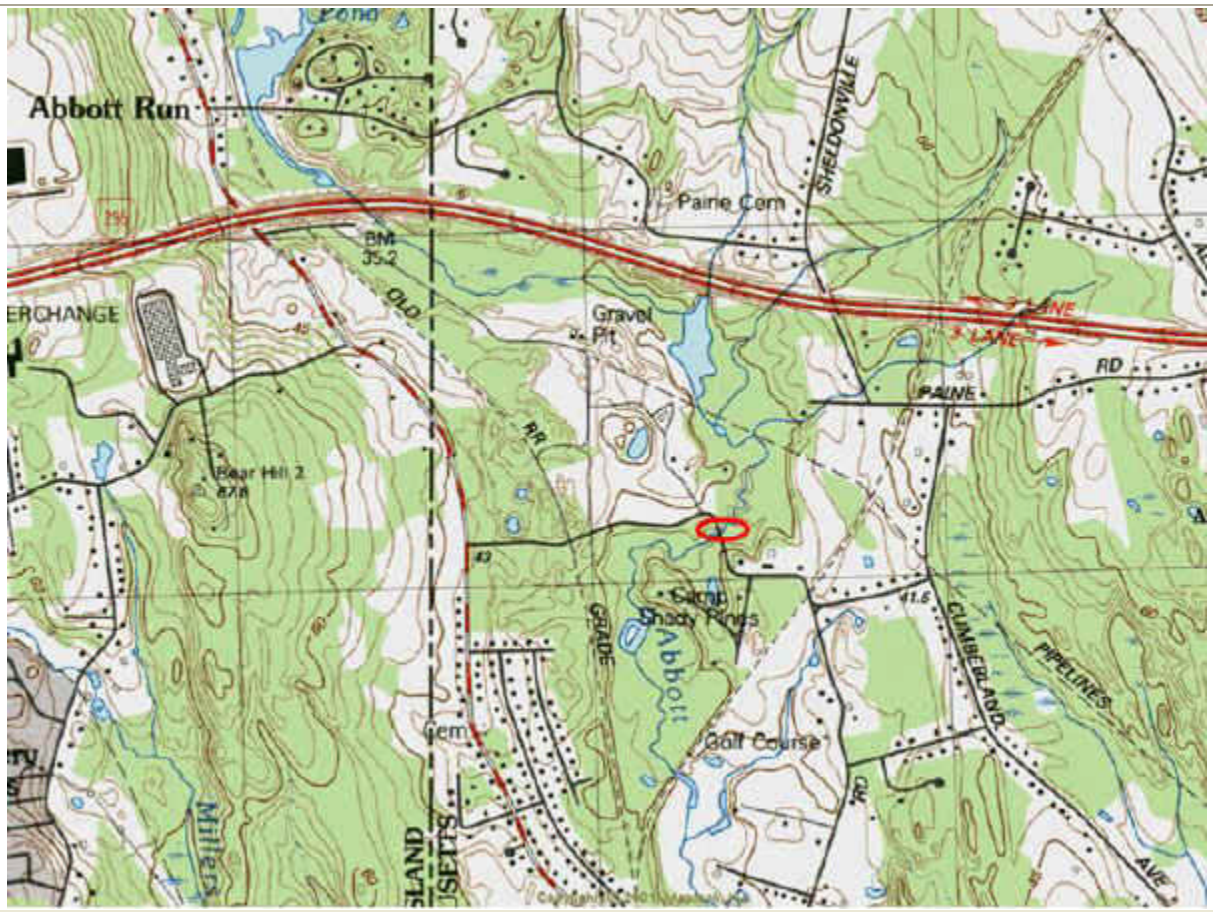
2004 Sightings Table Continued				
8/19	2	Blackstone River	Uxbridge Ma	Jen Loose, L Harper
8/17	5	Millers River	Orange Ma - Below Dam	Dave Small
8/14	10 - 15	Connecticut River	Hadley Ma	Nancy Goodman
8/14	1 male	The Big River	Coventry RI	Michelle St. Sauveur
8/12	1	Millers River	Erving Ma	Chris Buelow
8/8	20	Connecticut River	Deerfield to Sunderland	Chris Gentes, Tom Murray
8/6	1 teneral	Millers River	Athol Ma @ Tully River	Lynn Harper, Earle Baldwin
Thanks to everyone for the continued reports Report sighting info to: dhs@rubyspot.net				

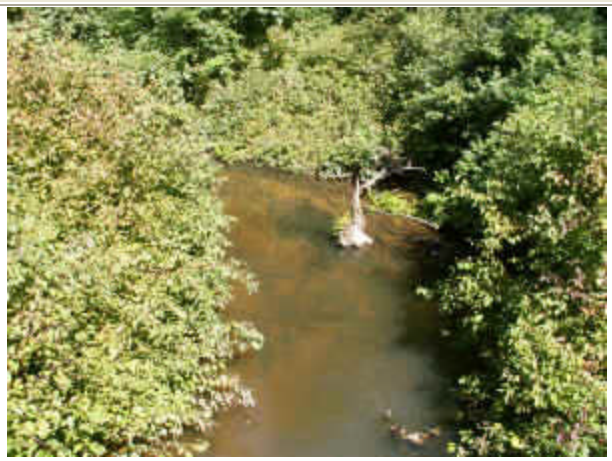
Massachusetts Rivers

5.1 Abbot's Run

9/10	23	19-M 4-F	Abbots Run	North Attleboro	D. Small, Earle Baldwin

September 10th was the day chosen to explore the Southeastern Massachusetts River in the Attleboro area. The Ten-mile, Seven Mile, and Bungay Rivers were pre chosen to investigate. While stopped a local mall parking lot to review our maps and get our bearings a local fisherman/naturalist stopped to check out the canoe racks on my car. We discussed our project and I asked about which streams held good Brook Trout populations. I described habitats with clean free flowing streams, sand or silty bottoms, and streamside vegetation. Our new friend gave us several leads but emphasized Abbott's Run as a beautiful stream meeting our criteria.






Abbot's Run
American Rubyspots found at the bridge

5.2 Blackstone

8/19/2004 2 Blackstone River Uxbridge Ma Jennifer Loose, Lynn Harper

"Originating as a series of streams in the hills of Worcester, the mighty Blackstone River flows 48 miles south into Rhode Island, dropping 450 feet before emptying into Narragansett Bay near Providence. The Blackstone River Watershed encompasses all or part of 29 communities in south central Massachusetts and Rhode Island. 382 square miles of its total drainage area of 640 square miles are in Massachusetts (this includes 24 of the 48 river miles). The watershed also encompasses 1300 acres of lakes, ponds, and reservoirs. The major tributaries of the Blackstone are the Quinsigamond, West, Mumford, Mill, and Peters Rivers. Worcester and Providence, the second and third largest population centers in New England, are in the Blackstone Watershed.

Originally named after the first European resident of the valley, the Reverend William Blaxton, the Blackstone Valley later became known as the "Birthplace of America's Industrial Revolution" when the settlers took advantage of the natural water power of the river in the early 19th Century. The Blackstone earned the reputation of being "America's hardest working river." In 1998, President Clinton designated the Blackstone River Watershed as an American Heritage River. The Blackstone became a part of the National Heritage Corridor system in 1986"
From: http://www.mass.gov/envir/water/blackstone/blackstone.htm

5.3 Connecticut River

8/28/2004	8	Sunderland (near Montague)	Chris Gentes
8/14/2004	10 - 15	Hadley Ma	Nancy Goodman
8/08/2004	20	Deerfield to Sunderland	Chris Gentes, Tom Murray

"The Connecticut River Watershed is the largest river ecosystem in New England, encompassing approximately 11,000 square miles and spanning over four New England states, including Vermont, New Hampshire, Massachusetts, and Connecticut. The headwaters of the river are at the Fourth Connecticut Lake next to the Canadian border. The river enters Massachusetts through the Town of Northfield and drains all or part of 45 municipalities before entering Connecticut through the Towns of Agawam and Longmeadow. It empties into Long Island Sound at Old Saybrook, CT.

The watershed was designated the Silvio O. Conte National Fish & Wildlife Refuge by an Act of Congress in 1991 and later became designated as a National Heritage River by President Clinton in 1998. It is the first of its kind that encompasses an entire watershed ecosystem. Many endangered species call the Connecticut Watershed home, including the American Bald Eagle, Shortnose Sturgeon, Peregrine Falcon, Puritan Tiger Beetle, Dwarf Wedge, and Yellow Lamp Mussel. The watershed's tidal wetlands have been deemed "Wetlands of International Importance especially as waterfowl habitat" under the Ramsar Convention, an international treaty named after the Iranian city where it was adopted in 1971. The Nature Conservancy named it one of their "Last Great Places" in 1993."

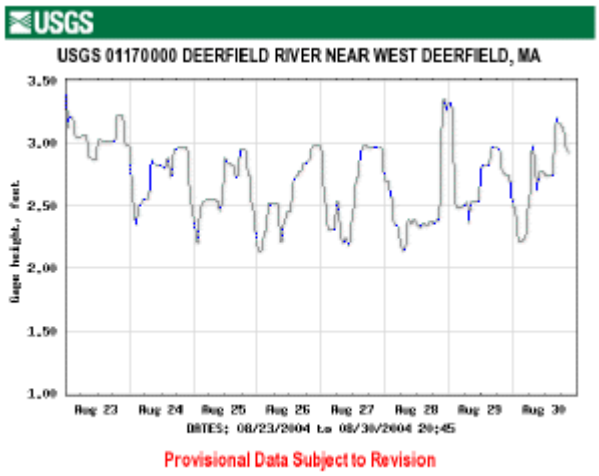
From: http://www.mass.gov/envir/water/connecticut/connecticut.htm

American Rubyspot, North of Route 116 Bridge, Sunderland Ma, 8/19/2001

5.4 Deerfield River

September 12, 2004	2	Deerfield	Lily Serrentino - ABNC
August 30, 2004	1	Deerfield at Rte 91	Nancy Goodman
August 27, 2004	70	Old Deerfield	Dave Small – Shelley Hight

"The Deerfield River, with its drainage area of approximately 665 square miles, is one of the coldest and cleanest rivers in Massachusetts. Most of its headwaters are located in the Green Mountains of southern Vermont. The Deerfield River flows approximately 70 miles before draining into the Connecticut River in Greenfield, Massachusetts. The watershed includes more than 149 streams, 21 lakes and ponds, and 20 municipalities with a population of approximately 35,000 people. As a result of the watershed's mountainous topography, the Deerfield River, which drops approximately 2000 feet from its headwaters to its confluence with the Connecticut River, is renowned for its steep profile and high water quality, which have historically attracted numerous sport-fisherman and whitewater enthusiasts. The raging currents of the river have also attracted large electric utilities, resulting in the construction of ten hydropower dams on the river since 1911. The state is actively involved in stocking the river with thousands of trout to augment native populations, along with approximately a half-million juvenile salmon, as part of a larger salmon restoration project in the Connecticut River."
(taken from http://www.mass.gov/envir/water/deerfield/deerfield.htm)



Looking at the Stream flow charts for Rivers where Operation Rubyspot has located numbers of Hetaerina americana this chart of the Deerfield really stuck out. Recreational discharges in the Deerfield are quite noticeable in the chart. The Rafters and other paddlers upstream are overjoyed by the releases. At least some of the American Rubyspots seem to survive the constantly fluctuating river levels.
Ma Stream Flow Charts

A population of American Rubyspots Hetaerina americana was located along this seemingly quiet but fast flowing section of the Deerfield on August 27th 2004. 70 individuals were counted in a short stretch behind the Old Deerfield Village. Most were observed along the grassy banks (upper left) or associated with floating debris dams (upper right)

9/12/2004 Lily captures the first Rubyspot of the day, The Rubyspot being freed.

5.5 Housatonic River

9/5/2005	5 male	Great Barrington	Lula Field	
9/11/2000	1 male	Sheffield	Brad Com[ton	

Hi, Dave -

On Sunday 9/5 I visited another site on the Housatonic River, in Great Barrington, in the vicinity of Brookside Road. In spite of the weather (65 & thick cloud) I did spot 5 male Rubyspots (no females). The only other species I saw was fawn darner - no clubtails.

This is an area of quickwater & some rapids, but it's sand & mud (or silt) - eroded bluffs with bank swallow condos. There's some old riprap on the south bank, & some bars of mud & small gravel. There are minnows in waterplants in the shallows, & large carp in the deeper areas. The surrounding area is the fairgrounds & other disturbed areas. This is not a nice clean pristine river stretch.

(The site I checked last week, in Lenox, has deeper water & slower current.)

Probably had it been sunny & warmer I would have seen lots of rubyspots! I won't be able to check this site again this season, but I hope to next year.

See you Sunday! - Lula

Hi Dave

I tracked down our Berkshire County Hetaerina americana, and have him in front of me. We caught it on 11 Sep 2000, in the Housatonic River, 700 m southeast of the Cook Road bridge in Sheffield. That's the covered bridge about a mile north of town center. We turned the record in for our permit, but not directly to Heritage.

Brad

--
Bradley W. Compton
Research Associate
Department of Natural Resources Conservation
Holdsworth Natural Resources Center
University of Massachusetts
Amherst, MA 01003

5.6 Millers River

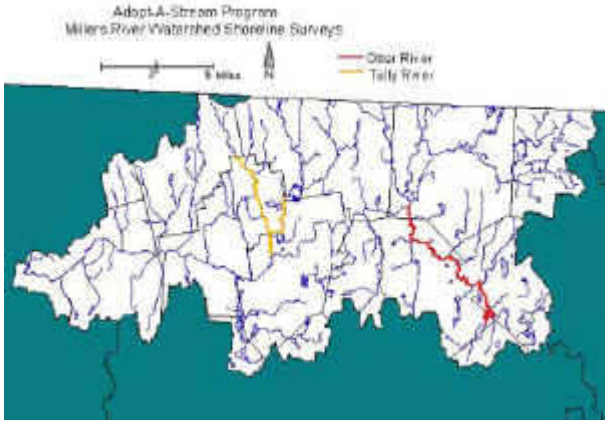
August 6, 2004	1 teneral	Athol Ma @ Tully River	L. Harper, E. Baldwin
August 12, 2004	1	Erving	Chris Buelow
August 17, 2004	5	Orange below dam	Dave Small
August 24, 2004	33	Athol - South Athol Rd	Dave Small
August 25, 2004	354	Athol Tully to 202 Bridge	Dave Small
September 4, 2004	140	Athol @ Tully River	ABNC-Ode News
September 27, 2004	3	Athol – South Athol Rd	Dave Small
October 6, 2004	2	Athol @ Tully River	Shelley Hight

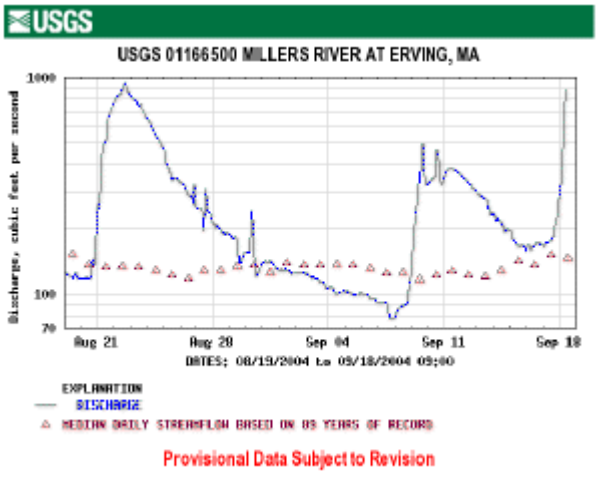
"The Millers River is located in north central Massachusetts, with approximately 20 percent of the watershed extending into the southern section of New Hampshire. The headwaters of the Millers River are located in southern New Hampshire and in the Massachusetts towns of Ashburnham and Winchendon. The river flows towards the south, then westward, eventually emptying into the Connecticut River. The total drainage area for the Millers River Watershed is 392 square miles. Approximately 320 square miles are in Massachusetts, with the remainder in New Hampshire. The watershed is made up of all or part of 17 municipalities, with a population of approximately 87,000 people, and includes 81 percent forestland, six percent open space or farmland, six percent wetlands, and seven percent urban land. The population centers are concentrated in the Gardner, Athol, and Orange areas.

The watershed encompasses some of the most rugged and steep terrain of the state's central upland, including "the Bear's Den," a five mile stretch of the Millers River known for its sharp drop in elevation and rapidly flowing whitewater. "Monadnocks," the residual hills of erosion-resistant rock, are an important component of the uninhabited mountain wilderness that is characteristic of the watershed. The watershed supports a wide variety of outdoor opportunities such as camping, hiking, picnicking, and scenic viewing, which are provided by the vast acreage of unspoiled open space and forestlands in public and quasi-public ownership."

From: http://www.mass.gov/envir/water/millers/millers.htm


Deerfield
Hudson
Millers
Nashua
Merrimack
Parker
Mass Ipswich
North Coastal
Connecticut
Westfield
Chicopee
Sudbury
Boston Harbor
Charles
Housatonic
Hudson
Farmington
Quinebaug
Blackstone
French
Taunton
South Coastal
Narragansett Bay
Mt. Hope Bay
Buzzards Bay
Cape Cod
Martha's Vineyard
Nantucket


Adopt-A-Stream Program
Millers River Watershed Shoreline Surveys
Otter River
Tully River

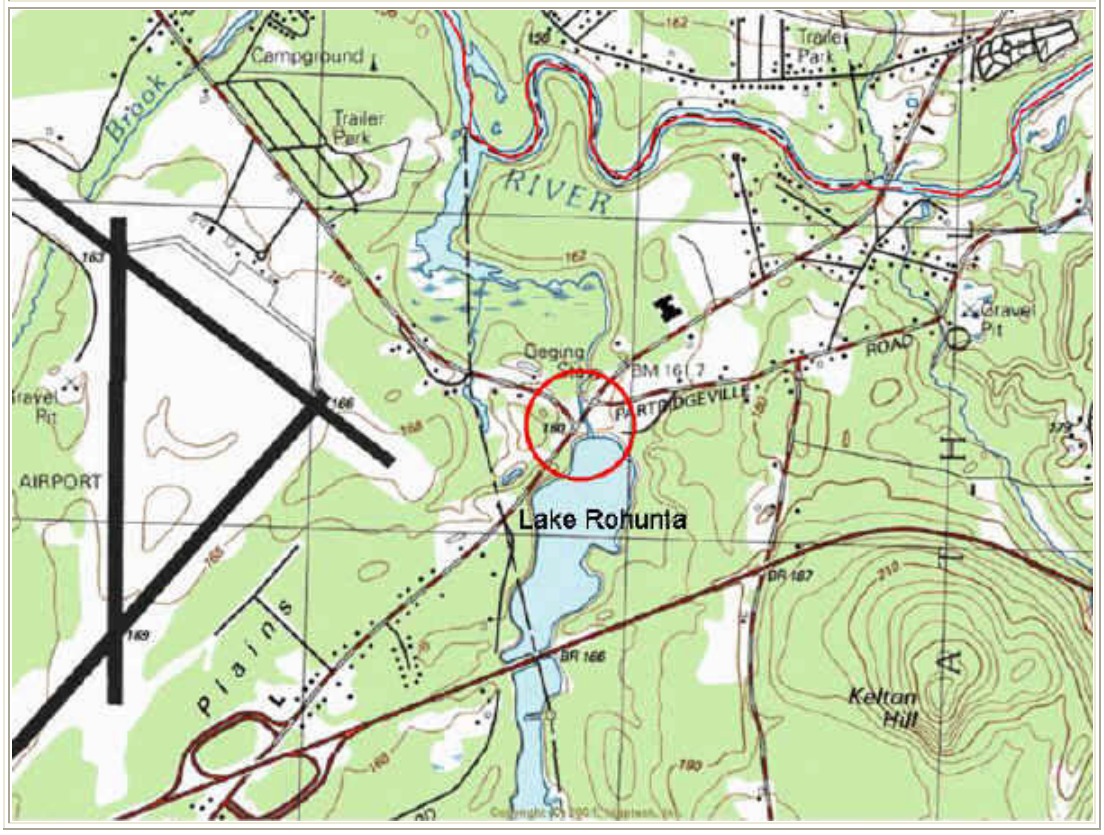

USGS
USGS 01166500 MILLERS RIVER AT ERVING, MA
1000
100
70
Discharge, cubic feet per second
Aug 21
Aug 28
Sep 04
Sep 11
Sep 18
DATES: 08/19/2004 to 09/18/2004 09:00
EXPLANATION
DISCHARGE
MEDIAN DAILY STREAMFLOW BASED ON 89 YEARS OF RECORD
Provisional Data Subject to Revision

5.6.1 Partridgeville Brook

September 4, 2004 10 9-M 1_F Athol-Lake Rohunta ABNC - Ode News

Partridgeville Brook in the Town of Athol connects Lake Rohunta to the Millers River at Cook's Cove. The 10 American Rubyspots were located on September 4th 2004 were immediately above and below the the Daniel Shay's Highway Bridge. This bridge is 100 yards below the Rohunta Dam. Rubyspots have been observed at this site in 2003. This somewhat atypical site is in the channeled section of the stream below the dam where an electrical turbine once made power for the Rodney Hunt Company in Orange.

Image: Tom Murray



5.7 Nissitisset River

August 30, 2004	39	29-M 10-F	Nissitissit River	Pepperell, Ma	Michael Veit

Hi Dave,

Just wanted to let you know that I observed 39 Rubyspots on the Nissitissit River yesterday, just below the NH border in MA. Let me know if there are any specific details that you would like. Hope all is well.

Michael

"The Nissitissit River, one of the major tributaries of the Nashua River, is a nine mile long stream, flowing through Brookline, NH and Pepperell, MA. The banks of the River are largely undeveloped, and nearly 2000 acres within its watershed are protected conservation land, held by groups such as the MA. Division of Fisheries and Wildlife, the Nissitissit Conservation Trust and the Beaver Brook Association. The Nissitissit and its adjacent lands receive heavy recreational usage by canoeists, hikers, bird watchers and fishermen. The Nissitissit is the closest major trout stream to metropolitan Boston, and deserves its reputation as one of the Commonwealth's finest.

The Stream Surveyors found the river to be healthy, with few indicators of point source or agricultural pollution. The majority of the riverbank throughout all sections is either forested or vegetated with shrubs and wetland plants. Significant wildlife activity was noted all along the river, most notably an expanding population of beavers. Of minor concern was natural stream bank erosion due to the predominance of sandy soil, and areas of trash (mostly beer cans) where cars can drive close to the river."

From: http://www.mass.gov/dfwele/river/rivnissitissit.htm

5.8 Squannacook River

August 29 2004	103	Squannacook River	Groton, Ma	Julie Lisk

Hi Dave-

I surveyed the lower section of the Squanacook (about 2 miles). I started from the bridge at Route 225 (also where the west Groton dam is) and paddled to where the Nashua and Squanacook rivers meet. I then paddled about 2 miles up the Nashua.

I did not begin to see rubies until I had paddled about a mile. Once I started to see them, I saw them until I hit the Nashua. It was about 4:30 when I saw my first one. I had started my journey at 1:30. I made many stops to try and net aeshnas etc. You can well imagine how excited I was to see a ruby!! As I knew I had a few miles yet to paddle to reach my car, I whizzed through ruby habitat and I am sure I missed many while counting.

The portion I paddled does not have any major rapids, elst I could not have done it. I am a novice paddler so have to stay on tame streams. However, the section I paddled is very beautiful! There are minor riffles in sections and the water does move (unlike the Nashua). I did note a couple of differences in the first mile compared to the second. The first mile was mostly in shade with many hemlocks and had little emergent vegetation. The second mile allowed more light to pass through because of tall high-canoped sycamore and silver maple trees. The rubies were most abundant amongst patches of sparganium. Also, in this section there are many blowdowns and at least 2 beaverdams. Which meant it was quite a challange getting around.

There are places to enter the river that do not require a canoe and the water in most places in no more than 30 inches deep.

Other odes observed were too many fawn darners to count (I lost track after 100), variable dancers, powdered dancers, dragonhunters, several unidentified darners, slender spreadwings, meadowhawks and ebony jewelwings.

If you get a chance to come out and would like a guide, let me know! Michael Veit is quite familiar with the river and may be able to supply additional info about other odes typically on the river. I hope to get to other sections of the river, but time will be hectic the next 2 weeks with out-of-country guests.

Does my habitat description fit other folks observations? Let me know if you have any more questions etc.

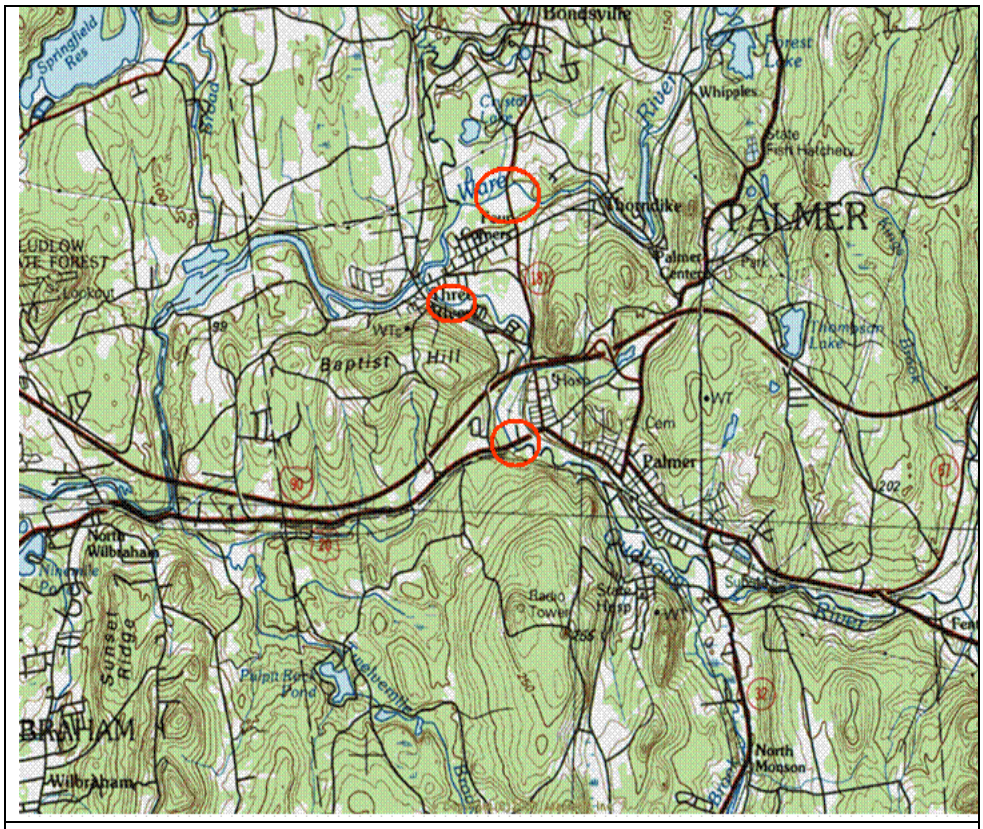
Thank you for getting this started!!!

Julie

5.9 Quabog River

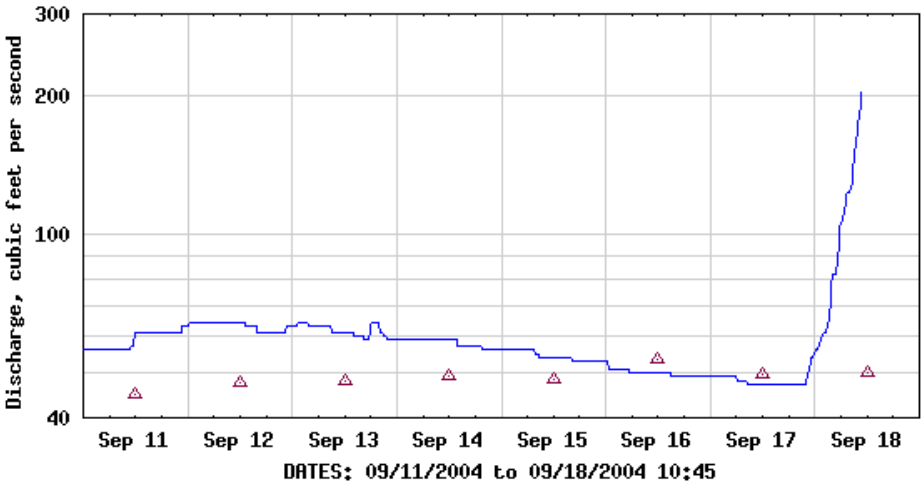
9/6	3	3-M	Quabog River	Palmer, Ma (Rte 20 bridge)	Shelley Hight, Dave Small

Having spent a day searching the upper reaches of the Quaboag River and not finding any signs of H. americana we ended the first days effort in Palmer. Fading sun made us postpone our search but the habitat was beginning to look quite promising. Returning to the Three Rivers section of Palmer we were rewarded with 2 Rubyspot sites on the Quaboag and one on the Ware River. The nearby Swift River, although clean and free flowing, showed no signs of any Rubyspot colonies.



USGS

USGS 01176000 QUABOAG RIVER AT WEST BRIMFIELD, MA



EXPLANATION

DISCHARGE

MEDIAN DAILY STREAMFLOW BASED ON 92 YEARS OF RECORD

Provisional Data Subject to Revision

5.10 Ten-Mile River

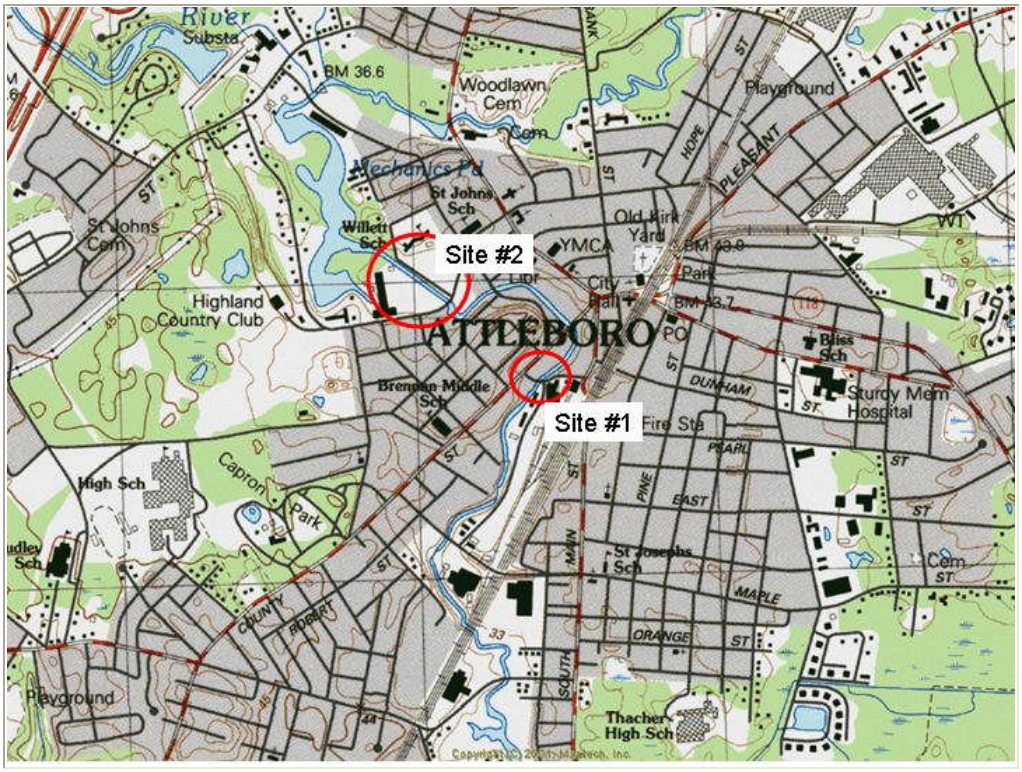
9/10	82	66-M 16-F	10-Mile River	Attleboro	D. Small, Earle Baldwin

'The Ten Mile River Watershed is located in southeastern Massachusetts and a small portion of northeastern Rhode Island. It is the smallest of the 27 major watersheds in Massachusetts with a total drainage area of approximately 54 square miles. The watershed encompasses all or part of seven municipalities. The Ten Mile River originates from its headwaters in the Town of Plainville, meanders south along the Massachusetts and Rhode Island border before ultimately emptying into the Seekonk and Providence Rivers of Narragansett Bay. The Ten Mile River picks up flow from two major tributaries, the Seven Mile River and the Bungay River, located in Attleboro. The Bungay River, whose headwaters extend into Foxborough, is flanked by the best red maple swamp habitat in Massachusetts and provides some of the best canoeing across the state. The upper reaches of the Seven Mile River and Four Mile Brook are classified as Outstanding Resource Waters, Class A."

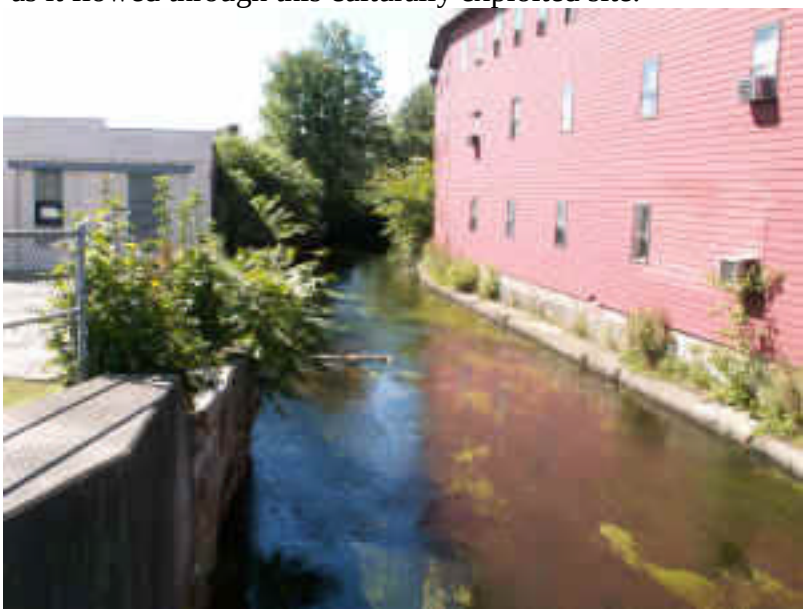
Source EOEA website

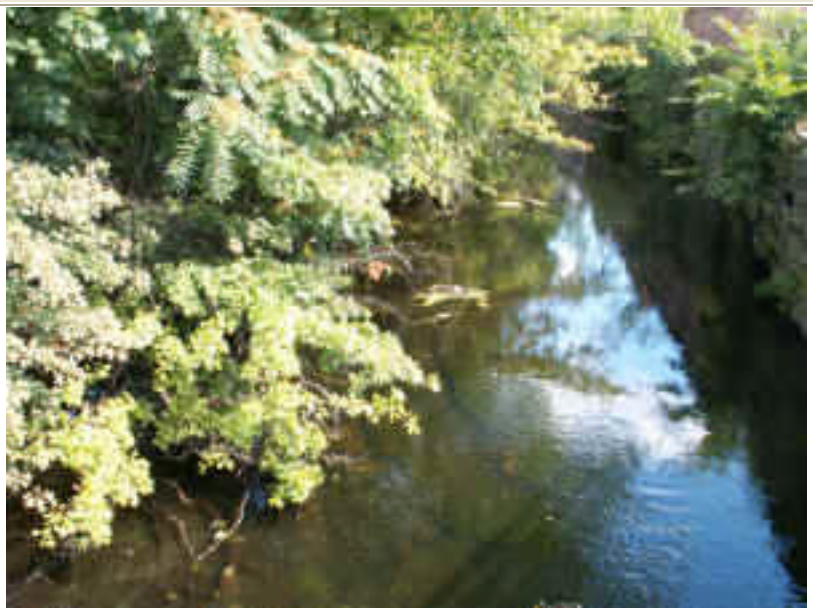
Both the Seven-mile and Bungay Rivers were Surveyed on 9/10/2002 finding no suitable flowing water for Rubyspots.

Both the Seven-mile and Bungay Rivers were Surveyed on 9/10/2002 finding no suitable flowing water for Rubyspots.



The first Massachusetts site on the Ten-Mile River we came to was in an industrial setting in Downtown Attleboro.
The River water appeared to be running pretty clean
as it flowed through this culturally exploited site.



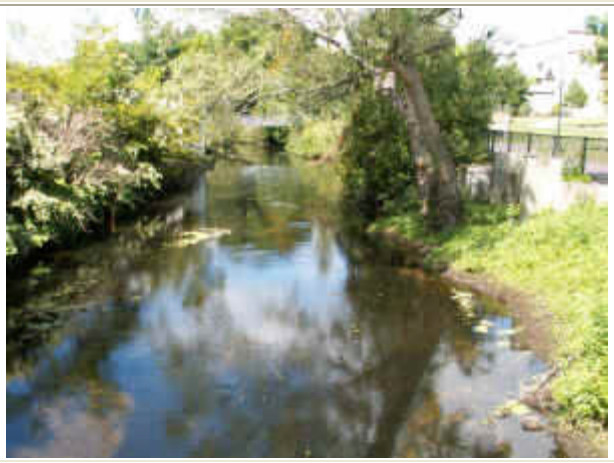


Vegetation on the banks seem to be a Rubyspot requirement.
Clean fast flowing water another. A Rubyspot perches on the stick in the right image.

This is a look at the Proulx Bridge at Site #1
This is a very urbanized setting

Site #2 just upstream for the previous site looked even more unlikely a Rubyspot site. As we approached the bridge rail from where this image was taken a female Rubyspot flushed from the plants on the left.

Factory and cement wall border this section



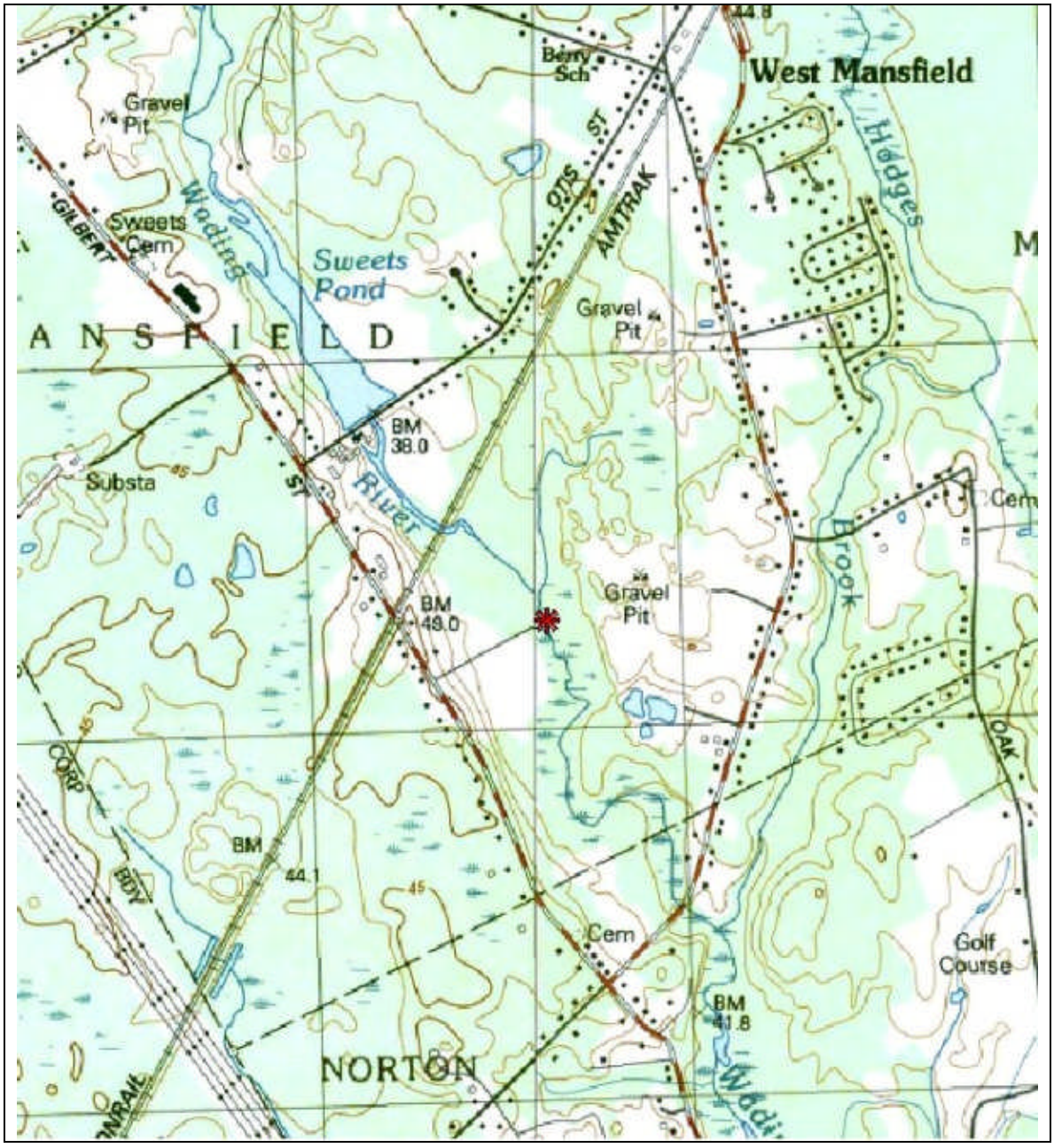
A parking lot in the left and a ballfield on the right flank
this section of the Ten-Mile River as a male rest on an outfall pipe

A Male American Rubyspot perches on the Painted Turtle
top while this narrow Riparian buffer
area provides vegetative habitat for a number of Rubyspots

5.11Wading River

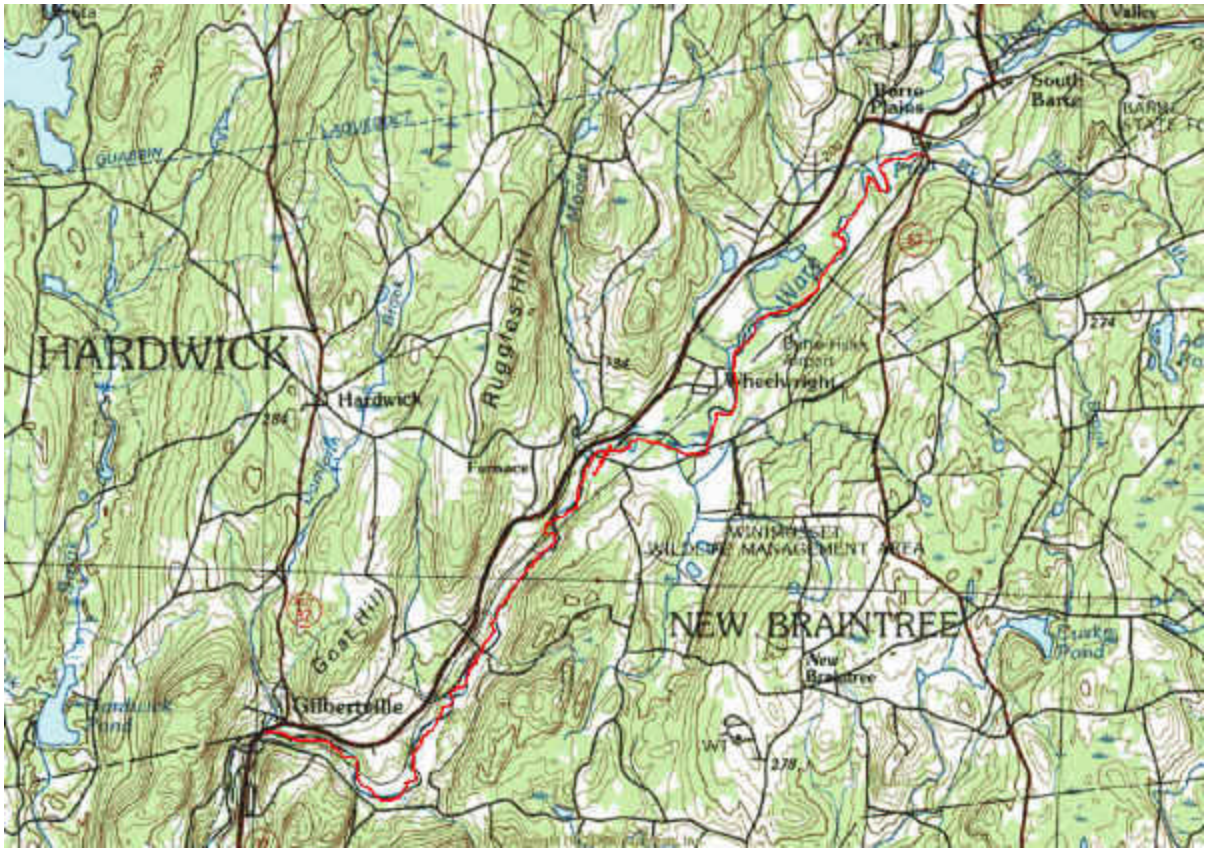
9/6/2004	4	--------	Wading River	Mansfield, Ma	Karro Frost

This colony of Hetaerina americana has been watched by Karro Frost of New England Environmental Inc. for several seasons. As she states this is only one of many clean streams in the region with potentially good habitat for American Rubyspots



5.12 Ware River

9/1/2004	32	27-M 5-F	Ware River	Hardwick, Ma (Gilbertville)	Michael Veit
9/6/2004	11	7-M 4-F	Ware River	Palmer, Ma (Rte 181 Bridge)	Shelley Hight, Dave Small



September 1, 2004: "Today, I paddled part of the Ware River that I have been surveying as part of my contract; from the bridge where Hardwick Road crosses, down to Gilbertville. I found Rubyspots at just about every riffle I dragged my canoe through, however, only is small numbers at each (i.e. the max. was 7 at any one riffle) see below. There were several riffles where I did not
see any, where I had expected to. It may just be that there were some, but I didn't see them, since, as I mentioned, the numbers were quite low. I only saw three (two females and one male) at locations that were not riffles. Each of the three were at separate locations. At riffles, males were perched on low rocks or logs, never on big boulders, or on grass or other emergent vegetation at the margins, like the smartweed that was abundant in places. Since they were riffles, the bottom substrate was sand and gravel. The exception was the three that were not at riffles, they were in slow sections. I saw none at rapids where there were large boulders, even though the water was flowing quickly between the boulders. All places I found them were sunny and open. I did not witness any
oviposition, but I did see two tandem pairs, and a few males chasing each
other around..." Michael Veit

Site above from the Ware River near palmer where this female was found

Rubyspots located 9/6/2005

5.13 Westfield River

8/30/2004	21	11-M 10-F	Westfield River	West Springfield, Ma	Nancy Goodman
8/29/2004	7	3-M 4-F	Westfield River	West Springfield, Ma	Nancy Goodman
8/28/2004	2	1-M 1-F	Westfield River	Huntington, Ma	Dave Small

"The beautiful Westfield River Watershed covers over 330,000 acres of land in Massachusetts. Rising along the eastern slopes of the Berkshires, the river flows southward through rural forested communities, winds its way through urban centers at the southern end of its journey, and finally enters into the Connecticut River in Agawam. The Westfield supports a population of approximately 85,000 people. Due to its steep slopes and thin rocky soils, the Westfield River water levels rise quickly following rain events and fall rapidly during dry spells. In all, the watershed includes 636 miles of rivers and streams, as well as over 4550 acres of lakes and ponds.

There are over 43 miles of federally designated Wild and Scenic waters on the Westfield River. Eight municipalities receive all or part of their drinking water from reservoirs in the watershed. The upper Westfield River is also one of the few successful spawning areas in the state for the Atlantic salmon. The watershed hosts the oldest continuously run white water canoe race in the United States, the Westfield River Whitewater Race, which is held every spring. The watershed also encompasses the Cobble Mountain Reservoir, which constitutes the second largest water supply in Massachusetts and is responsible for supplying water to the City of Springfield and most of its surrounding communities."

From: http://www.mass.gov/envir/water/westfield/westfield.htm

For more information contact: http://www.westfieldriver.org/

6. Other New England Rivers

9/23	2	2-M	Souhegan River	Amherst, NH	Pam Hunt
9/17	4	2-M 2-F	Wood River	Alton, RI	Maria Aliberti -Emily Brunkhurst
9/12	2	1-M 1-F	Penobscot River	Lincoln, Me	Nick Castrataro
9/6	17	12-M 5-F	West River	Dummerston Vt (Windom Cty)	Bryan Pfeiffer
9/1	9	6-M 3-f	Big River	Coventry, RI (same as 8/14)	Michelle St. Sauveur
8/31	32	24-M 8-F	Lewis Creek	Ferrisburgh, Vt	Sharon Riley, Bryan Pfeiffer
8/14	1 male		The Big River	Coventry RI	Michelle St. Sauveur

We wish to acknowledge the assistance and insight of Odonatists from around the Northeast in helping track Hetaerina americana habitats. A special thanks to all the folks reporting in the table above and to Tom Fiora, Ginger Brown and others for offering added insights. Folks reported seeing H. americana in Maine, New Hampshire, Vermont, and Rhode Island. Connecticut had no one searching habitats and I would assume the species likely occurs in several rivers

It should be noted that Pam Hunt located Hetaerina americana in the Merrimac River just north of the Massachusetts Border in New Hampshire. A search by foot was unable to locate the species in Massachusetts and an additional search by kayak may be needed.

Ginger Brown's e-mails on the presence of Hetaerina in urban habitats in Rhode Island helped to develop the search strategy in Southeastern Massachusetts. (see below) Searching similar habitats on the Nashua were less successful but questions of water quality and similarity of substrates may be contributing factors.

> Hi Dave,
>
> I wanted to report a new Hetaerina americana site for Rhode Island that you might find interesting (I sure did!). It's not a new river for the species, but a new site on the Pawtuxet River. As usual below a dam. What is interesting about this one is that the population at this location is enormous, and there is absolutely NO intact riparian buffer. In fact, it is asphalt and concrete on all sides. The Pawtuxet is an urban river over much of its run but we have never found Hetaerina americana in the truly trashed urban portions of the river. It is apparently thriving there. Brings a new perspective to future surveys perhaps, or at least a new perspective to the tolerance to habitat degradation of this damselfly.
>
> Happy hunting.
> ginger

7. Summary:

American Rubyspot *Hetaerina americana* is an elegant damselfly which had been recently reported in only four watersheds in Massachusetts. Members of the Athol Bird and Nature Club became interested in *H. americana* when a large population was located during exploration of the Millers River in Athol.

With the help of a small research grant from the Massachusetts Natural Heritage and Endangered Species program ABNC set out to provide distribution data to enable the assessment of the regional status of the American Rubyspot, currently a "watch listed" species in Massachusetts. To engage the public in our search for the American Rubyspot, we designed and distributed “Wanted Posters” in the form of a flyer that proclaims the American Rubyspot as the charismatic damselfly we seek. We provided observers the reward of posting their sightings and photographs on our American Rubyspot web site www.rubyspot.net. The resulting public website answers the question for everyone: “Where in the Northeast is the American Rubyspot?”

A major component of the project was testing the use of outreach and reporting strategies to engage interest in odonate study. Any interested observer was able to report sightings through the Rubyspot website, e-mail, mail, fax, and/or phone messages. This process lays important groundwork in developing a strategy for future statewide Massachusetts Ode atlas and survey work.

Volunteers surveyed 33 Massachusetts Rivers and resulted in the discovery of American Rubyspot populations in 13 of these rivers across Massachusetts. Information from Maine, Pennsylvania, New Hampshire, Vermont and Rhode Island were also recorded.

The project strategy for engaging volunteers through the internet is quite promising. This project would not have been possible without the aid of the volunteers listed below and the wonderful age of internet communications which allowed the energy of the search to flow throughout the Northeast

Maria Aliberti, Ed Armstrong, Earle Baldwin, Christy Barnes, Elise Barry, Rinky Black, Chris Buelow, Virginia Brown, Emily Brunkhurst, Ron Cloutier, Sue Cloutier, Glenn Corbiere, David Fitch, Tom Fiore, Nancy Goodman, Lula Field, Karro Frost, Christopher Gentes, Lynn Harper, Shelley Hight, Pam Hunt, Janice LaPointe, Julie Lisk, Jennifer Loose, Jan McNamara, Joanie McPhee, Scott McPhee, Bob Moul, Fred Morrison, Tom Murray, Bryan Pfeiffer, Elaine Pourinski, Fred SaintOurs, Lilly Serrentino, Pat Serrentino, Michelle St. Sauveur, Michael Veit

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