



**CT DEEP
River
Bioassessment
by Volunteers
(RBV)
Program**

WWW.CT.GOV/DEEP/RBV

**2013
Annual Program
Summary
(Report #15)**



Connecticut Dept. of Energy and
Environmental Protection

Bureau of Water Protection
& Land Reuse

Monitoring & Assessment Program



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Cover Photos:

Top Left: Kendale Sheffield and Aiden Cherniske pose with crayfish they discovered during their RBV event.

Bottom Right: Woody Manes, Joshua Fusaro, and Fuller Manes also proudly display crayfish found during their RBV assessment on Bull Mountain Brook in Kent.

Photos courtesy of the Kent Conservation Commission and The Marvelwood School.

Acknowledgements

Local leaders across the state deserve special recognition for ensuring that the RBV program is a success each year. These individuals put countless hours into organizing their programs, coordinating with DEEP staff, recruiting and training volunteers, and more. During the 2013 season, the following individuals served as local RBV program leaders - thank you!!

Ann Astarita (Candlewood Valley Trout Unlimited)

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Penny Howell (East Lyme Conservation Commission)

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Connie Manes* (Kent Conservation Commission)

Becky Martorelli (Quinnipiac River Watershed Association)

Tom Ouellette (Vernon Conservation Commission)

Rod Parlee (Bolton Conservation Commission)

Alisa Phillips-Griggs (Farmington River Watershed Association)

Jean Pillo (The Last Green Valley)

Judy Rondeau (Niantic River Watershed Committee)

Gary Steinman (Roxbury Conservation Commission)

Trudy Swenson (Roxbury Conservation Commission)

Chuck Toal (Colchester Brownie Troop)

Pat Young (Salmon River Watershed Partnership; Eightmile River Watershed Wild & Scenic Partnership)

**New participant in the RBV program – Welcome to the Program!*

***Returning past participants who were not able to participate in 2012 – Welcome Back!!*

Thank you also to the following educators for incorporating RBV into their classrooms:

Mike Aitkenhead (Staples High School)

Laura Ashburn (East Lyme High School)

Chris Brittain (WAMOGO High School)

Mark Britton (Maloney High School of Meriden)

Courtney Cardinal (Killingly High School Vo-Ag Program)

Laurie Doss (The Marvelwood School)

Tom Fahsbender (Washington Montessori School)

Kathy Greene (RHAM High School)

Ann Hadley (Manchester Community College)

Diba Khan-Bureau (Three Rivers Community College)

Jackie Rose (Woodstock Academy)

Shannon Rose (E.O. Smith Depot Campus)

Suzanne Salemi (University of Connecticut)

Finally, the River Bioassessment by Volunteers Program (RBV) would also not be possible without the dedication of the hundreds of volunteers that participate annually – thank you to each of you! We hope to see you again this fall!

Photograph Contributions

Photographs in this report were provided by the group credited beneath the caption – thank you to everyone who contributed!

All macroinvertebrates images are courtesy of The Marvelwood School. A big thank you to Laurie Doss and her students for providing these wonderful images!

Get Involved with RBV Today!

River Bioassessment by Volunteers (RBV) is a 'treasure hunt' during the fall (September through November) for Connecticut's most valuable streams!

RBV volunteers are trained to study the aquatic life of a local stream system. Volunteers collect 'macroinvertebrates,' or 'river bugs,' which are then used by DEEP to identify streams with excellent water quality.

As an RBV volunteer you collect valuable environmental data that will help ensure protection of the beautiful stream in your neighborhood or backyard. If this sounds interesting, we would love to have your participation!



Volunteers Brenda Cataldo and Rich Jewell collect an RBV sample from the Blackledge River in Bolton.

Photo courtesy of Bolton Conservation Commission.

Join a Local RBV Group in Your Area Today!

Individual volunteers are encouraged to contact a local RBV group in your area. These organizations would love to have additional hands to assist in their efforts!

New volunteers are required to attend a half day training session led by either the DEEP Volunteer Monitoring Coordinator or a certified RBV trainer. If you need assistance locating the nearest RBV group in your region, please contact the Volunteer Monitoring Coordinator at 860-424-3061 or Meghan.ruta@ct.gov.

No Group in Your Area? Establish a New RBV Group!

Groups or organizations located in an area without an existing RBV program can start a new RBV program. New groups are trained by the Volunteer Monitoring Coordinator during a two-year mentorship period. During the mentorship period the Coordinator will help assist with site selection, volunteer training, and equipment loans. After the conclusion of two successful RBV seasons, local coordinators are certified by the Coordinator as an official RBV Trainer and Local RBV Program Coordinator. Contact the Volunteer Monitoring Coordinator at 860-424-3061 or Meghan.ruta@ct.gov to learn more.

2013-2014 Volunteer Monitoring Coordinator Contact Information:

Meghan Ruta
CT DEEP Bureau of Water Protection and Land Reuse
79 Elm Street, Hartford, CT 06106-5127
(860) 424-3061 or meghan.ruta@ct.gov

Executive Summary

The *River Bioassessment by Volunteers* program (RBV) is volunteer water quality monitoring protocol developed and administered by the Connecticut Department of Energy and Environmental Protection (DEEP). The RBV program provides volunteers with a relatively simple, yet standardized methodology for using aquatic macroinvertebrates to assess the relative water quality of wadeable streams. (Wadeable streams are those that you can walk across.)



Examples of Connecticut’s aquatic macroinvertebrates – commonly called ‘stream bugs’ by RBV volunteers.

Photographs courtesy of The Marvelwood School

Aquatic macroinvertebrates are excellent indicators of stream quality not only because they are relatively easy to collect and identify, but because certain species are very sensitive to changes in water quality. The most sensitive species can tolerate only very small amounts pollution and will therefore only be present in Connecticut’s healthiest streams, or those with the best water quality.

RBV volunteers are trained to look specifically for pollution sensitive macroinvertebrates. If volunteers are able to find four or more of these ‘Most Wanted’ macroinvertebrate types at an RBV location, it provides DEEP with the proof necessary to document the stream as one of Connecticut’s healthiest streams. RBV volunteers are essentially participating in a ‘treasure hunt’ to find Connecticut’s healthiest streams!

The RBV program also serves as an important environmental education program. Volunteers are trained to better understand their local watershed and to better serve as environmental stewards in their communities. Perhaps most importantly, the program is fun and open to volunteers of all ages!

In 2013, 565 volunteers from 30 organizations worked together to collectively monitor 137 sites on more than 90 different streams in Connecticut! 23 of the sites were monitored for the first time.

Table 1. Annual RBV Program Statistics

	2010	2011	2012	2013
RBV Vouchers Submitted	119	120	132	140
Unique Monitoring locations (Appendix A)	106	117	127	137
Waterbodies Monitored	76	68	96	92
Fall Vouchers w/ 4+ "Most Wanted" Types	18	24	21	33
Groups Participating	22	21	22	30
Individual Participants	400+	400+	400+	565
Groups Participating for First Time	6	5	4	4
Returning Groups	16	16	18	26

Volunteers contributed an estimated 3,257 hours over the course of 99 RBV events (e.g. trainings, monitoring events, post-season appreciation events, etc.). The majority of volunteers were high school students (46%) and adults aged 22-65 years old (27%), with college-age (10%), elementary school-age (8%), and participants older than 65 years (9%) comprising the remainder of the volunteer population. Approximately 73% of volunteers were new volunteers while 27% were returning participants.

A variety of groups and organizations use the RBV program to help identify Connecticut's healthiest streams. Types of organizations involved include local conservation commissions, school science classes, conservation and environmental organizations, watershed groups, river-recreation based groups, land trusts, and more! **Groups that participated in the RBV program in 2013 include:**

- | | |
|---|---|
| Bolton Conservation Commission | Friends of the Lake |
| Kent Conservation Commission | Housatonic Valley Association |
| Mill River Collaborative | Killingly Agricultural Education Center |
| RHAM High School | Niantic River Watershed Coalition |
| The Marvelwood School | Pomperaug River Watershed Coalition |
| The Nature Conservancy | Quinnipiac River Watershed Association |
| WAMOGO High School | Roxbury Conservation Commission |
| Candlewood Valley Trout Unlimited | Salmon River Watershed Partnership |
| Colchester Brownie Troop | The Last Green Valley |
| CT Audubon Society Center at Pomfret | Three Rivers Community College |
| E.O. Smith Depot Campus | Vernon Conservation Commission |
| East Lyme Conservation Commission | Washington Montessori School |
| East Lyme High School | Woodstock Academy |
| Eightmile River Watershed Wild & Scenic Partnership | Staples High School (Weston) |
| Farmington River Watershed Association | Maloney High School of Meriden |

At 33 of the sites monitored by RBV volunteers in 2013, volunteers were able to find enough of the 'Most Wanted' macroinvertebrate types (four or more) to allow DEEP to consider listing that stream segment as 'fully supporting' State water quality standards. Finding four or more 'Most Wanted' types basically means that these streams are among the best the State has to offer!

Even more impressive –2013 RBV volunteers identified the greatest percentage of sites with 4 or more macroinvertebrates in 10 years! (24% of all sites monitored in 2013 had four or more 'Most Wanted' types, while 25% of the samples collected in 2003 had four or more.)

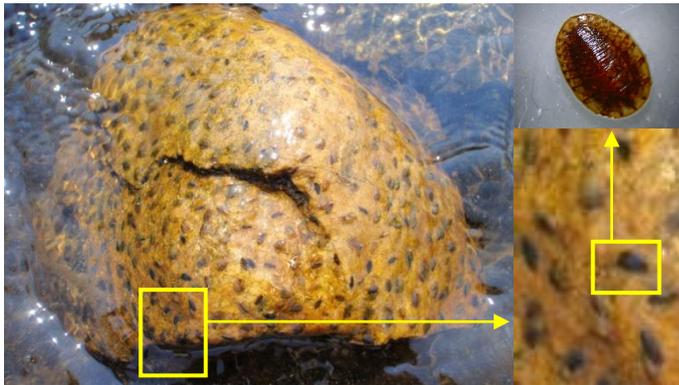
All support materials including a more detailed description of the RBV program, the methodology, data sheets, sorting guides, macroinvertebrate field ID cards, and recent annual summary reports are available on the DEEP volunteer monitoring web page (www.ct.gov/deep/rbv).

2013 RBV volunteers identified the greatest percentage of sites with four or more 'Most Wanted' macroinvertebrate types in 10 years!

Macroinvertebrates – the Foundation of RBV

The goal of the River Bioassessment by Volunteers (RBV) Program is to provide volunteer monitoring programs with a relatively simple yet standardized methodology for the collection of 'macroinvertebrates' from small, wadeable Connecticut streams.

What's A Macroinvertebrate?



Macroinvertebrates are organisms that live in the stream and can tell us a lot about the water quality of that stream.

They are large enough to be seen with the naked eye ('macro') and lack a backbone ('invertebrate').

The RBV Program focuses specifically on riffle-dwelling macroinvertebrates, or those stream bugs that live within riffle habitat on stream bottoms. Riffles are

fast moving, shallow areas of stream often characterized by tennis ball to basket ball sized rocks that create 'mini whitecaps' in the stream. Such macroinvertebrates include insects in their larval or nymph form (such as the water penny beetle larva shown clinging to the stream rock above), crayfish, freshwater snails and clams, and worms.

How Can a Macroinvertebrate Tell Us About Water Quality?

Aquatic macroinvertebrates are good indicators of stream water quality because:

- They can't escape pollution so they show the effects of short- and long term pollution events.
- They are a critical part of the stream's food web – if they start to die off from pollution, other wildlife will also be affected.
- Some are very intolerant of pollution – because they will start to disappear as water quality decreases due to pollution they can serve as an early warning sign of something wrong
- They are relatively easy to collect and identify. All you ultimately need is a net, you, and a little bit of training!

Macroinvertebrates of the RBV Program

The RBV Program does not include all macroinvertebrates that live in Connecticut. Instead, the program focuses on 33 macroinvertebrate taxa, each with distinct shape, structure, color, or behavior.

Organisms were selected for inclusion in the RBV program based upon three key criteria:

- The organism must have a statewide distribution
- The organism should provide key information about the stream system

- The organism has a unique behavior or morphological characteristic easily identified by new volunteers

Each of the RBV Program macroinvertebrate organism types was then placed into one of three categories: **'Most Wanted'**, **'Moderately Wanted'**, or **'Least Wanted'**:

- **'Most Wanted'** - Macroinvertebrate types typically found in streams characterized by outstanding water quality. These macroinvertebrates are frequently very intolerant of pollution; they therefore require the very cleanest of water to survive.

Examples of **'Most Wanted'** macroinvertebrates include the **'Michelin Man'** caddis fly (*Rhyacophila sp.*), Giant Stonefly (*Pteronarcys sp.*), and Common Stonefly (Perlidae) shown below.



- **'Moderately Wanted'** - Macroinvertebrate types typically found in a range of conditions from outstanding to good water quality.

Examples of **'Moderately Wanted'** macroinvertebrates include the **'Fingernet'** caddis fly (Philopotamidae), **'Water Penny'** (*Psephenus sp.*), and Dragonfly (Anisoptera) shown below.



- **'Least Wanted'** - Macroinvertebrate types found in all types of water quality conditions, from outstanding to poor. These stream bugs are not necessarily bad, but because they can survive in very poor conditions, if the only macroinvertebrates we find in our stream are the **'Least Wanted'** types, it is potentially a sign of poor water quality.

Examples of **'Least Wanted'** macroinvertebrates include aquatic worms, leeches, black fly larvae, and amphipods.

The name of each of the three qualitative categories is intended to characterize water quality and is not intended to imply that those in the least wanted category are harmful or result in nuisance conditions. All of the RBV organisms play an important ecological role in our stream systems.

In addition, an 'Other' category was added to the RBV program starting in 2005 based on suggestions from RBV participants. Macroinvertebrate types in the 'Other' category represent organisms that can be very common in Connecticut streams and/or are very familiar to participants, but which do not meet the 3 criteria listed above.

Examples of 'Other' macroinvertebrates include Crane Flies (*Tipula sp.* and *Hexatoma sp.*), riffle beetles (Elmidae), and crayfish (shown below, left to right).



Detailed information about each organism can be found on the RBV program Field Identification Panels, which are available for viewing and download from the DEEP web page: www.ct.gov/deep/rbv.

Join the 'Treasure Hunt' for CT's Healthiest Streams!

The RBV Program is designed to generate macroinvertebrate-based volunteer water quality monitoring data that can be used to identify small streams with exceptionally high water quality. Suitable sites for the RBV program include streams that:

- flow year-round except under extreme drought conditions
- Are less than knee-deep
- Are first or second order streams, typically less than 20 feet wide; waterbodies with the name "stream", "brook", "creek" are often suitable candidates
- have shallow, fast flowing, rocky areas (i.e. 'riffles') such as that in the picture above
- have no obvious sources of pollution nearby such as a permitted discharge or listed impairment
- have public access or permission has been granted by the property owner



A riffle section of a stream. DEEP Photograph

Unfortunately, RBV is not suitable for use on all streams. If volunteers attempt to implement the RBV method in a location that does not meet the above criteria, the program will not generate meaningful results. Streams that are known to be degraded and/or do not have clearly defined riffle habitat, in particular, are not suitable for study using the RBV method. Many urban streams, for example, do not have the habitat or water quality necessary to support the macroinvertebrate organisms upon which the RBV program is dependent.

If the stream that you want to monitor is listed as impaired, or is not characterized by riffle habitat, contact the Volunteer Monitoring Coordinator to discuss other more suitable monitoring options.

MMI Score Prediction Model: A Tool to Help Guide RBV Site Selection

DEEP staff have developed a GIS-based Macroinvertebrate Multimetric Index (MMI) prediction model to predict the water quality (i.e. MMI score) of a given basin (Figure 1). The MMI score is the composite score generated from a suite of macroinvertebrate-based water quality metrics calculated for a particular site. (In order to do this, DEEP uses a collection method similar to RBV but identifies at least 200 organisms in the sample rather than just creating a taxa list and voucher for the site.) **Typically an MMI score of 48 or greater is indicative of acceptable water quality conditions (i.e. the stream segment is 'fully supporting' aquatic life use support standards).** The MMI prediction model uses spatial information such as land use and watershed characteristics (e.g. slope, upstream area) to calculate an expected MMI score for the given stream reach or basin.



2013 RBV site on the Shepaug River in Washington.
Photo courtesy the Washington Montessori School.

Traditionally, State monitoring programs have focused a large percentage of their effort on monitoring larger waters, and those that are impaired waters or presently receiving discharges. Consequently, we have less data on the smaller headwater streams (i.e. 1st and 2nd order streams) which play a critical role in providing high quality water to these larger systems as well as many other important ecological functions. **DEEP is therefore particularly interested in RBV data points that can help confirm high water quality predictions at locations on small first and second order streams that have not been previously monitored.**

Excellent candidate sites for RBV assessments are those that meet the criteria noted on page 7, and that are also believed to be characterized by good to excellent water quality based upon a predicted Macroinvertebrate Multimetric Index (MMI) model score of 48 or higher.

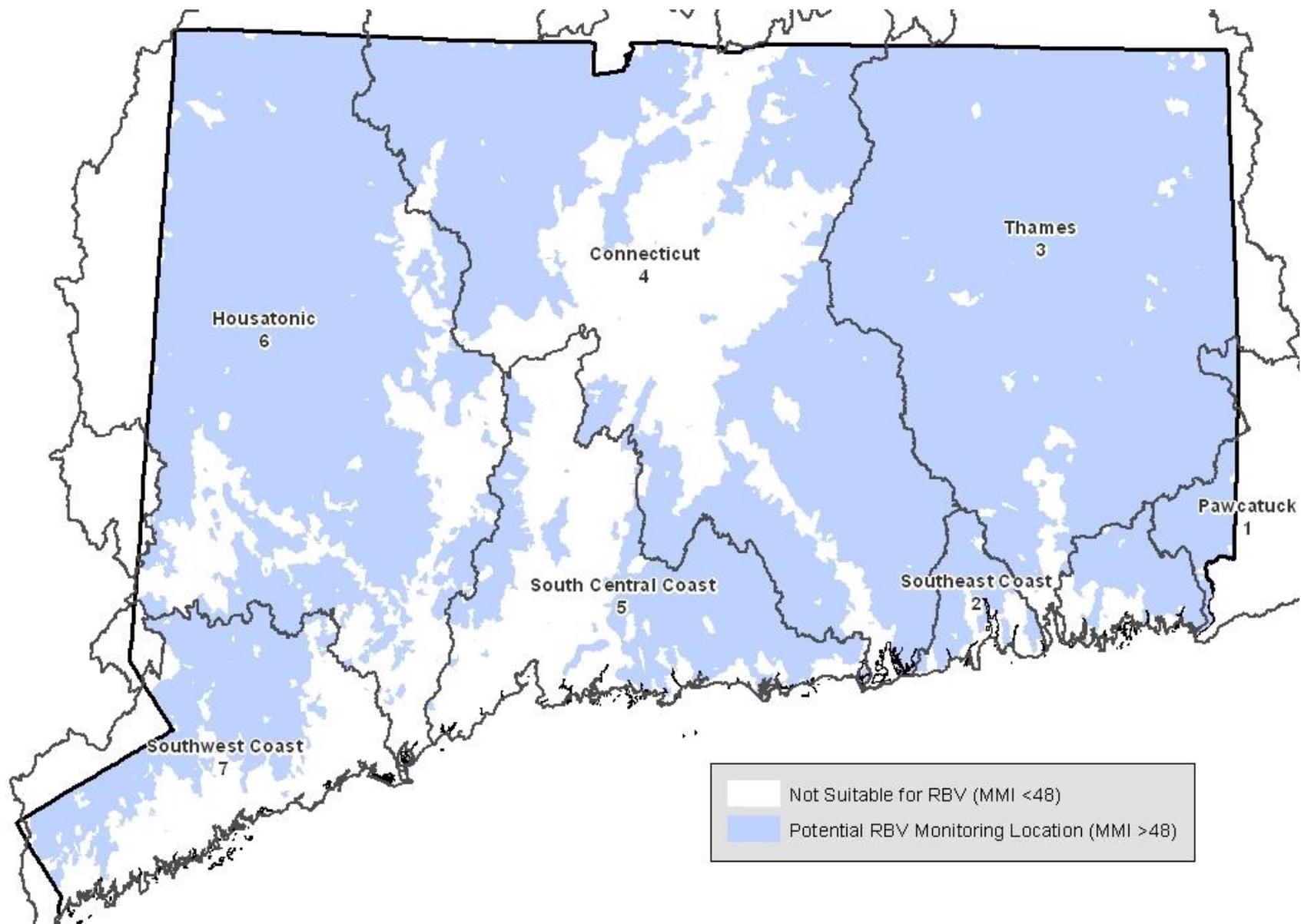


Figure 1. Macroinvertebrate Multimetric Index (MMI) score predictions for local basins in Connecticut. MMI scores of 48 or greater are predictive of good to excellent water quality conditions. Areas predicted to have an MMI score of 48 or higher are priority locations for RBV monitoring.

Overview of the RBV Method

The RBV Program is coordinated by the CT DEEP and implemented annually in the fall (September 1- November 30) by local RBV groups.

RBV volunteers collect macroinvertebrates from a fast moving, shallow section of a stream called a 'riffle.' Although macroinvertebrates live in other habitats (e.g. pools within streams) and other water body types (e.g. wetlands, lakes), different macroinvertebrates have different preferences for their habitat. Therefore we might find a different set of macroinvertebrates in a riffle than we would find in a pool – even within the same stream segment. Because RBV volunteers all sample within the same riffle habitat type, we are able to compare results between sites.



Volunteers in Bolton collect an RBV sample from a stream riffle.

Photo courtesy Bolton Conservation Commission

In order to collect the macroinvertebrates, or 'sample', volunteers work together in pairs or small groups using a special rectangular net called a 'kick net.' Using their hands the volunteers place rocks from the stream bottom inside the net and gently 'scrub' them to dislodge any bugs that might be clinging to the rock. Once all rocks in front of the net have been scrubbed, they are put to the side and then the volunteer uses their feet to disturb the stream bottom in front of the net. This stirs up any additional bugs that might have been burrowing in the sediment. The stream current pushes any macroinvertebrates that were knocked off the rocks or kicked up from the stream bottom into the net.

After rock scrubbing and sediment kicking at six riffle locations within the stream reach (i.e. RBV site)



Danielle Nappi and Anneka Daalhuijzen, students from The Marvelwood School in Kent, work together to sort an RBV sample.

Photo courtesy of The Marvelwood School

to be monitored, volunteers return to shore to work together to 'sort' their sample. (Using tweezers and spoons volunteers pick out any macroinvertebrates found in the sample and place them into an ice cube tray. The individual cubes of the ice cube tray are used to try to keep macroinvertebrates that look similar together as the volunteers sort through their sample.

Once the volunteers think they have found all of the macroinvertebrates possible, or once they are no longer picking out any new types of macroinvertebrates from the sample, the team then attempts to identify the macroinvertebrates.



Aiden Cherniske records a site GPS position on the program datasheet. *Photo courtesy of the Kent Conservation Commission*

Volunteers are not expected to be taxonomic experts! Rather, DEEP has provided volunteers with some simple identification guidance materials to try to help volunteers differentiate different types of macroinvertebrates from each other. A check off list or datasheet is provided to help volunteers keep track of which type of macroinvertebrates they think they have found in their sample. The actual data, however are the macroinvertebrates themselves. Volunteers therefore put one or two of each type of macroinvertebrate that they believe they have identified in their sample, into a voucher container, at the conclusion of the event. It is this voucher container that DEEP will review to determine what types of macroinvertebrates were actually present at the site.

The voucher container is usually a plastic or glass jar or vial. Before sealing the voucher, a label containing the name of the stream, the location of the sampling site, the date of the sample, the names of the collectors and other key information is completed and placed in the voucher.

Both the voucher sample and the data sheet are submitted by the volunteer group to DEEP (via the Volunteer Monitoring Coordinator) for review and inclusion in the annual RBV program report.

Volunteer Training Requirements

All volunteers are required to attend annual training led by either the DEEP Volunteer Monitoring Coordinator or a local DEEP-Certified RBV Trainer.

New volunteer training sessions provides an overview of the program and introduces new participants to the RBV method. New volunteer training typically lasts approximately 3 hours, including a field demonstration component. New volunteers are paired with one or more experienced volunteers and assigned a nearby monitoring site at which to carry out the RBV method. Typically, teams travel to their site during the same day to carry out the RBV process. The collection and sorting process takes approximately 2-3 hours to complete when conducted streamside at the monitoring site. (The complete RBV process, including both training and sampling, takes approximately 5-6 hours.)

Return volunteers who have demonstrated experience with the program may be approved to complete an abbreviated refresher training rather than the full new volunteer orientation training.

Local RBV group coordinators are required to submit a training record at the conclusion of their monitoring season. This record demonstrates to EPA that all volunteers were properly trained and therefore the data should be reliable for use in DEEP's water quality assessment process.



John and Derek Strillacci monitor the Eightmile River in Southington. *Photo courtesy of the Quinnipiac River Watershed Association.*

How Does DEEP use RBV Data?

RBV data is used by CT DEEP's Monitoring and Assessment Program to identify streams that are characterized by high water quality. RBV volunteers submit a voucher collection that contains at least one of each type of macroinvertebrate they found at their sampling site. **While all vouchers serve as useful data as they each provide a documented taxa list that was present at that site on the sampling date, the most meaningful vouchers are those that contain four or more of the 'Most Wanted' or most pollution intolerant macroinvertebrate types.** These vouchers provide DEEP with evidence that allows us to say with confidence that the location monitored is a high quality stream segment – one of Connecticut's stream treasures!

At the conclusion of each RBV season (November 30th), DEEP staff begin the process of reviewing each RBV voucher submitted. The locations are reviewed for accuracy and logged into the State database of water quality monitoring locations. The contents of each voucher are then inspected by trained DEEP staff under a microscope and identified to the lowest taxa needed to assign it to an RBV macroinvertebrate 'type' – typically the genus level. (10% of vouchers receive a 'blind' review by a second staff person as a quality control check for the identification process.)

RBV vouchers with 4 or more types of organisms in the 'Most Wanted' category can be used by DEEP to indicate that the RBV monitoring location is a healthy stream segment. DEEP can use this information in the assessments that are reported to EPA and Congress and entered into the State's long-term water quality records.

The absence of the 'Most Wanted' types in any sample does not necessarily mean the water quality is low or that the stream is unhealthy; further information is required before an assessment of water quality conditions can be made. Errors made by volunteers will tend to underestimate the macroinvertebrate community present in the final voucher. Similarly, any variable that reduces the quality or completeness of any step in the RBV method (e.g., high stream flow, inclement weather conditions, nuisance insects, rushed time constraints, etc.) may ultimately reduce the number of different macroinvertebrate organism types found at the site. For this reason, we do not automatically assume that an RBV voucher with less than 4 Most Wanted types is indicative of poor stream conditions.

Similarly, because so many factors can negatively influence the number of most wanted types found at a site, the RBV method is not suitable for use to monitor for impairments or degradation of water



Meghan Ruta (right), DEEP Volunteer Monitoring Coordinator, discusses the different types of macroinvertebrates found in a 'kick' with Jos Spelbos (left), a member of the Kent Conservation Commission, during an RBV training hosted by the Housatonic Valley Association on Furnace Brook in Cornwall. *Photo courtesy of the Housatonic Valley Association.*

quality. If volunteers suspect impairment at a location, they should not conduct an RBV assessment; rather, volunteers are encouraged to contact DEEP staff to discuss other monitoring options.

Where Does the ‘Four or More’ Rule Come From?

In addition to coordinating the annual volunteer RBV program, DEEP’s Monitoring and Assessment Program has an extensive ‘internal’ statewide water quality monitoring program. Each fall DEEP staff travel to 100-200 sites throughout the state to collect macroinvertebrate samples. DEEP uses a collection method similar to the RBV method, however the processing of the samples is much more in-depth and typically involves an expert identifying at least 200 organisms from each sample. This information is used to calculate a series of macroinvertebrate-based water quality metrics as well as a final, composite Macroinvertebrate Multimetric Index or MMI score. MMI scores of 48 or higher are considered for listing a site as ‘fully supporting’ state water quality standards for Aquatic Life Use support.



Connecticut Audubon Society volunteers work together to sort and identify the contents of an RBV sample collected from the Little River in Putnam.
Photo courtesy of the Connecticut Audubon Society.

Despite DEEP’s extensive internal annual monitoring program, it is not possible to directly monitor all of the State’s streams on an annual or even biannual basis. Connecticut has more than 5,800 miles of rivers and streams throughout the State – a distance roughly equivalent to the length of US-Mexico and US-Canada borders combined!

Therefore, in 1990, DEEP staff reviewed the macroinvertebrate data and MMI scores that that been reported to date to determine whether volunteer monitors could help ‘screen’ water quality conditions in their watershed. **DEEP found that if four or more taxa from a particular subset of sensitive macroinvertebrate types were present at a monitoring site, that the site always had a final composite MMI score higher than 48.** Therefore DEEP developed the RBV method as a simplified volunteer-based version of its own monitoring and assessment program. Today, DEEP relies on volunteer data such as RBV voucher submissions to help ‘fill in the gaps’ that DEEP was not able to directly monitor during each two-year monitoring cycle.

2013 Participation Summary

In 2013, thirty organizations directly participated in the RBV program (Figure 2). Organizations included local conservation commissions, elementary and high school teachers and classes, river and watershed partnerships, and environmental conservation organizations. Together these groups hosted a combined 99 RBV events in 2013!

Conservation Commissions:

- Bolton Conservation Commission
- East Lyme Conservation Commission
- Kent Conservation Commission
- Roxbury Conservation Commission
- Vernon Conservation Commission

Education-Based Partners:

- Colchester Brownie Troop
- E.O. Smith Depot Campus
- East Lyme High School
- Killingly Agricultural Education Center
- Maloney High School of Meriden
- RHAM High School
- Staples High School (Weston)
- The Marvelwood School
- Three Rivers Community College
- WAMOGO High School
- Washington Montessori School
- Woodstock Academy

River and Watershed-Based Organizations:

- Eightmile River Watershed Wild & Scenic Partnership
- Farmington River Watershed Association
- Friends of the Lake
- Housatonic Valley Association
- Mill River Collaborative
- Niantic River Watershed Coalition
- Pomperaug River Watershed Coalition
- Quinnipiac River Watershed Association
- Salmon River Watershed Partnership
- The Last Green Valley

Environmental Conservation Groups:

- Candlewood Valley Trout Unlimited
- CT Audubon Society Center at Pomfret
- The Nature Conservancy

Four participating groups were first time participants, including the Kent Conservation Commission (Kent), Mill River Collaborative (Stamford), WAMOGO High School (Litchfield), and RHAM High School (Hebron). Past participants who were not involved in 2012 but reactivated their RBV programs in 2013 included The Marvelwood School (Kent) and The Nature Conservancy.

Additional groups that did not directly coordinate an RBV program in 2013, but that were cited as having supported the above local RBV programs included:

- 3M Purification Inc.
- Colchester Land Trust
- Eastern Connecticut Conservation District
- Farmington River Coordinating Committee
- Friends of the Hockanum River Linear Park
- Hebron Conservation Commission
- Pootatuck Club
- Shepaug River Association
- St. John's Episcopal Church
- Trout Unlimited Nutmeg Chapter
- Wallingford Conservation Commission

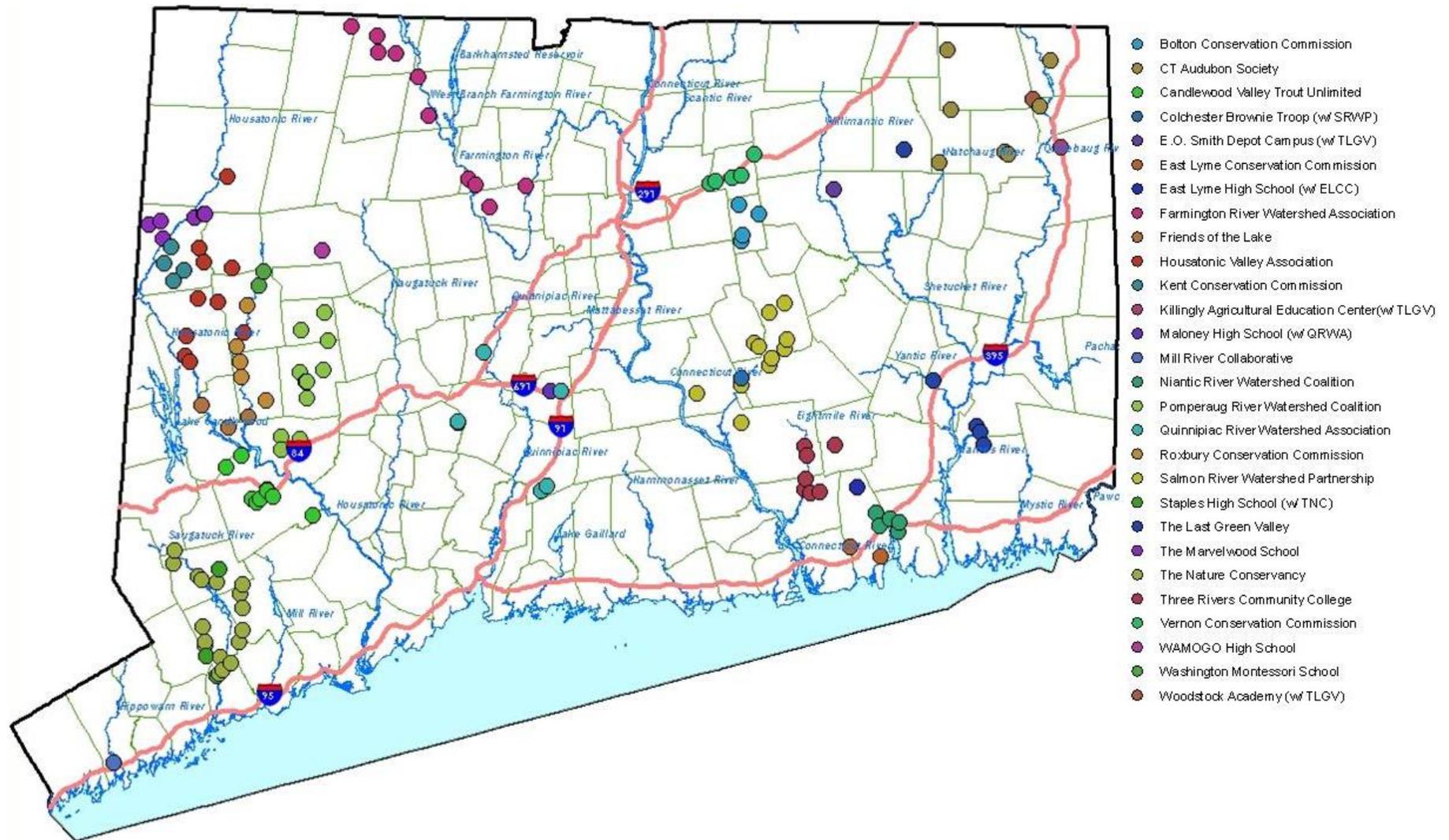


Figure 2. 2013 Local RBV Monitoring Organizations. Monitoring locations are color-coded by the local RBV organization responsible for collecting and submitting the data.

RBV monitoring locations spanned a total of 51 Connecticut towns in 2013 (Figure 3) including:

- Ashford
- Avon
- Barkhamsted
- Bethlehem
- Bolton
- Bridgewater
- Canton
- Colchester
- Colebrook
- Cornwall
- Danbury
- East Haddam
- East Hampton
- East Lyme
- Eastford
- Easton
- Fairfield
- Hebron
- Kent
- Killingly
- Ledyard
- Litchfield
- Lyme
- Mansfield
- Marlborough
- Meriden
- New Milford
- Newtown
- Norfolk
- Norwich
- Pomfret
- Preston
- Prospect
- Putnam
- Redding
- Roxbury
- Salem
- Southbury
- Southington
- Stamford
- Thompson
- Vernon
- Wallingford
- Warren
- Washington
- Waterford
- Weston
- Westport
- Wilton
- Woodbury
- Woodstock

Many of these towns were active partners in the local RBV programs in their area.

Nineteen (19) subregional watersheds were represented by at least one or more RBV monitoring locations in 2013 (Figure 4).

Watershed	#2013 RBV Sites	Watershed	#2013 RBV Sites
<i>Connecticut River Major Basin</i>		<i>South Central Coast Major Basin</i>	
Connecticut Main Stem	0	Quinnipiac	7
Eightmile	4	South Central Eastern Complex	0
Farmington Watershed	9	South Central Shoreline	0
Hockanum	6	South Central Western Complex	0
Mattabesset	0	<i>Major Basin: Southeast Coast</i>	
Park	0	Southeast Eastern Complex	0
Salmon	17	Southeast Shoreline	0
Scantic	0	Southeast Western Complex	8
Stony Brook	0	<i>Southwest Coast Major Basin</i>	
<i>Housatonic River Major Basin</i>		Norwalk	0
Aspetuck	8	Saugatuck	20
Blackberry	0	Southwest Eastern	0
Candlewood	0	Southwest Shoreline	0
Hollenbeck	0	Southwest Western Complex	1
Housatonic Main Stem	22	<i>Thames River Major Basin</i>	
Naugatuck	0	Fivemile	1
Pomperaug	12	French	1
Shepaug	10	Moosup	0
Still	0	Natchaug	3
Tenmile	0	Pachaug	0
<i>Hudson River Major Basin</i>		Quinebaug	5
Croton	0	Shetucket	0
<i>Pawcatuck River Major Basin</i>		Thames Main Stem	3
Pawcatuck Main Stem	0	Willimantic	2
Wood	0	Yantic	1

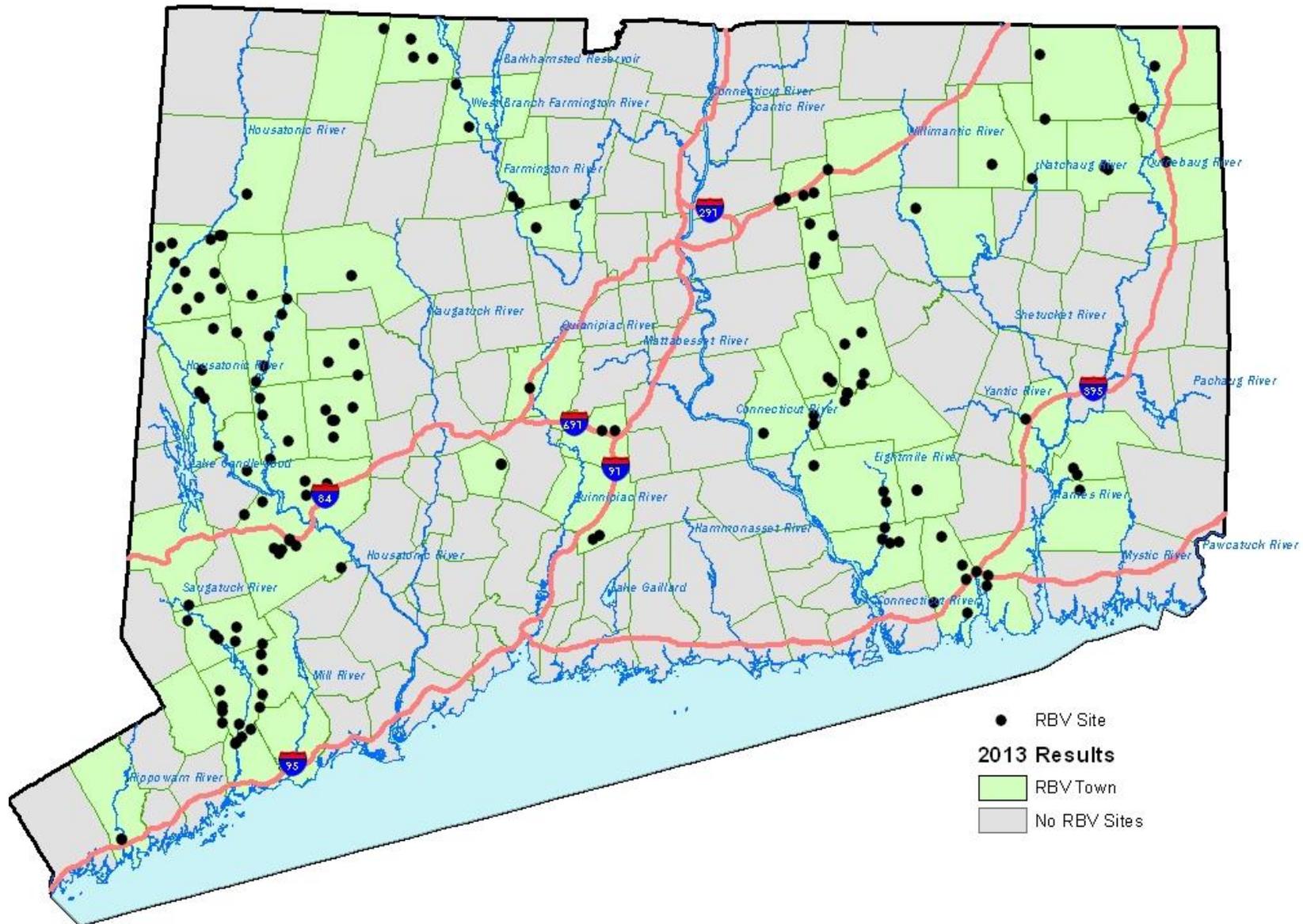


Figure 3. Towns represented by 2013 RBV monitoring locations. Towns with one or more monitoring location are shaded green. (Note: The municipalities themselves were not necessarily involved in the RBV program.)

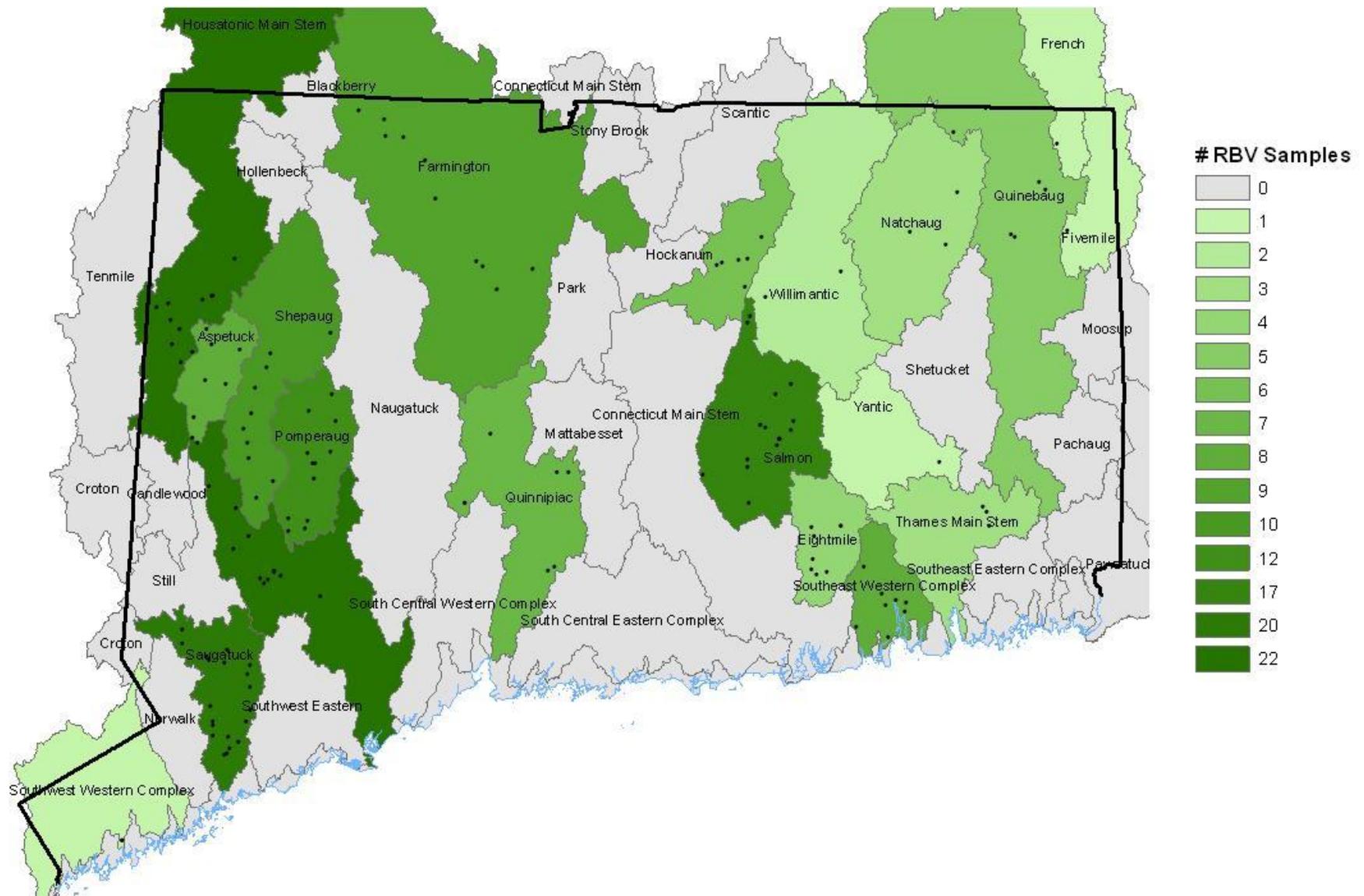
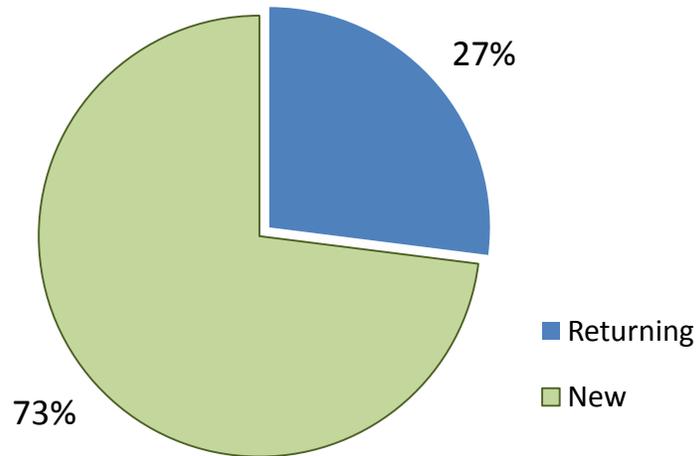


Figure 4. Watersheds (DEEP subregional basins) represented by 2013 RBV monitoring locations. One or more RBV monitoring locations were located in watersheds shaded green in 2013; darker green color indicates a greater number of RBV monitoring locations in the watershed. Watersheds shaded gray were not represented by 2013 RBV sites.

Volunteer Statistics

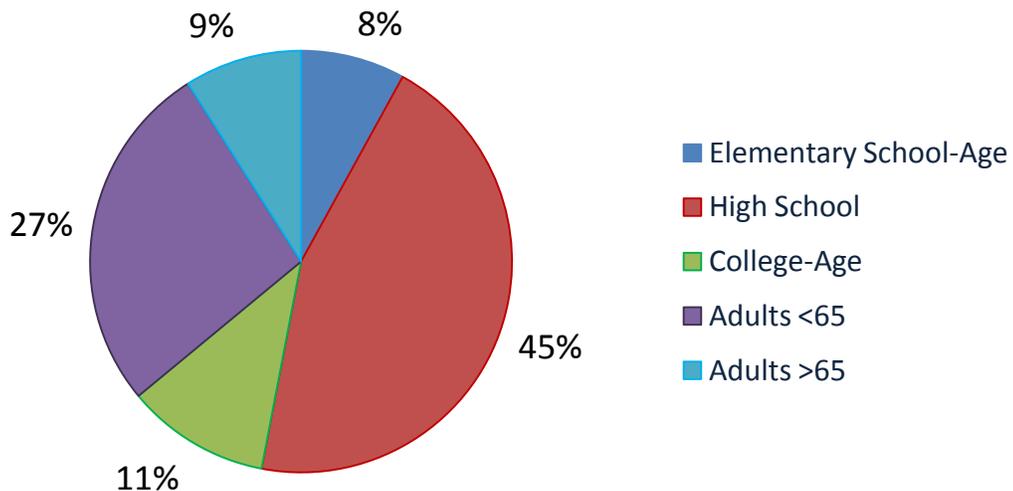
A total of 565 volunteers directly participated in the RBV program in 2013, contributing an estimated total combined volunteer contribution of 3,257 hours. The majority of these volunteers helped to directly monitoring at least one RBV stream location, although a handful of volunteers participated in training only. An estimated 73% of volunteers were new volunteers while 27% were returning participants.

2013 Volunteers: New vs. Returning



The majority of volunteers were high school students (46%) and adults aged 22-65 years old (27%). College-age (10%) and elementary school-aged participants (8%) along with participants older than 65 years (9%) comprised the remaining percentage of the volunteer population.

2013 Volunteers: Age Composition



2013 Program Results

2013 marked the 15th year volunteer monitoring groups collected and submitted vouchers to DEEP under the RBV program. An estimated 565 volunteers representing thirty (30) volunteer monitoring groups participated in the 2013 program. **Together, volunteers collected 140 vouchers from 137 locations on 92 different waterbodies during 2013 (Table 2, Figure 5).** The distribution of most wanted types in the samples ranged from none to eight!!

Table 2. 10-Year RBV Program Summary Statistics

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
# Vouchers	31	53	64	75	92	88	108	105	110	99	140
# Unique Sites	31	54	68	80	92	96	113	106	117	127	137
# Waterbodies	26	43	49	59	66	58	76	76	68	96	92
# Towns	20	30	35	40	52	42	51	41	44	56	51
# Groups	14	20	19	19	26	20	22	22	21	22	30
#Volunteers	110	232	215	250	325	350	400	400+	400+	400+	565

Thirty-three (33) of the 2013 sites had 4 or more types in the ‘Most Wanted’ category (Table 5). The presence of four or more ‘Most Wanted’ macroinvertebrate organism types at these sites indicates that these are healthy streams. This information can be used by DEEP to support their stream assessment process under the Federal Clean Water Act.



Volunteers with The Last Green Valley's Water Quality Monitoring Program inspect the results of their most recent 'kick'. *Photo courtesy of The Last Green Valley.*

Thirty-five (35) fall 2013 vouchers contained three most wanted types (Table 6). Although these sites do not meet the ‘4 or More’ criteria to be officially be listed as a healthy stream, water quality at these sites is likely good. **These sites warrant a return visit by volunteers during the 2014 RBV season.**

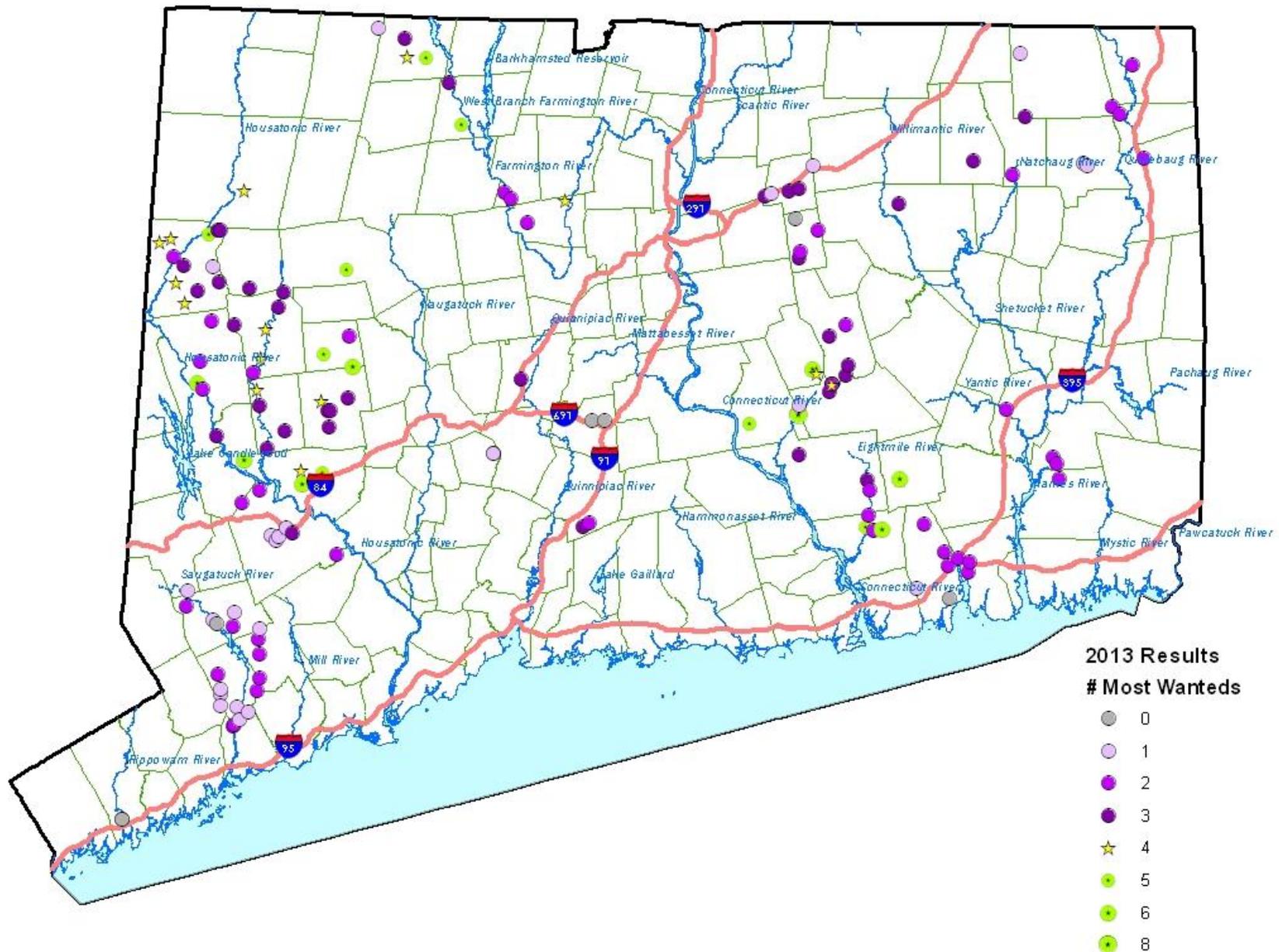


Figure 5. 2013 RBV Results Map. The number of 'Most Wanted' macroinvertebrate types present in 2013 RBV voucher samples. Sites are considered to be 'healthy' if 4 or more 'Most Wanted' macroinvertebrate types were present; these sites will be considered for listing in the 2016 Integrated Water Quality Report (IWQR) to Congress.

Table 3. 2013 RBV Program Results: All Results. The macroinvertebrate types present in the 140 vouchers submitted to WPLR during 2013. The samples are sorted alphabetically by stream name and town, and then descending by the greatest number of most wanted types present in a voucher; column numbers corresponds to the macroinvertebrate panel numbers on the RBV datasheet, identification cards, and sorting guide. Samples with 4 or more total most wanted macroinvertebrate types (sites highlighted in bold) indicate excellent water quality. These sites will be considered for listing as ‘fully supporting’ Aquatic Life Use Support goals within the State water quality standards; fully supporting sites are reported in the biannual Integrated Water Quality Report which is reviewed by EPA and Congress.

Stream Name	Site #	Town	Date	1 - Drunella	2 - Isonychia	3 - Epeorus	4 - Peltoperlidae	5A - Perlidae	5B - Pteronarycs	5C - Misc. Stonefly	6A - Glossosoma	6B - Apatania	7 - Rhyacophila	8A - Brachycentrus	8B - Lepidostoma	Total Most	9 - Hydropsychidae	10 - Chimarra	11 - Stenonema	12 - Psephenus	13A - Corydalus	13B - Nigronia	14A - Dragonfly	14B - Damselfly	Total Moderate	15A - Arthropoda	15B - Isopoda	15C - Leech	15D - Midge	15E - Simuliidae	15F - Snail	15G - Worm	Total Least	Total Other		
Aspetuck River	15380	Easton	10/5/2013		X			X								2	X	X	X			X			4					X			1	1		
Aspetuck River	16260	Easton	10/6/2013		X			X								2	X		X	X		X	X		5				X			X	2	1		
Aspetuck River	16261	Easton	10/6/2013					X						X		2				X		X	X		3								0	3		
Aspetuck River	16259	Fairfield	10/5/2013		X								X			2	X	X		X		X			4								0	0		
Aspetuck River	14126	Westport	10/5/2013									X				1	X	X			X	X	X	X	6								0	2		
Aspetuck River	15375	Westport	10/5/2013					X								1	X	X	X	X			X		5						X		1	0		
Aspetuck River Trib.	18139	Redding	10/6/2013					X								1	X	X				X	X		4								0	0		
Bantam River	15138	Litchfield	11/15/2013		X			X		X	X	X				5	X	X	X	X	X		X		6				X				1	3		
Battleswamp Brook	18493	Roxbury	9/28/2013		X			X	X	X						4	X	X	X			X			4				X				1	4		
Beaver Brook	15312	Lyme	10/26/2013		X					X						2	X						X		2					X			1	1		
Blackledge River	15324	Bolton	11/17/2013					X					X			2	X	X	X				X		4								0	0		
Blackledge River	14137	Marlborough	9/14/2013		X	X		X		X				X		5	X	X	X	X	X	X	X	X	8									0	2	
Bolton Pond Brook	16266	Bolton	11/17/2013							XX						2		X	X						2								0	2		
Bull Mountain Brook	18514	Kent	9/28/2013		X		X			X						3	X	X	X	X			X		5									0	1	
Bull Mountain Brook	18510	Kent	9/28/2013		X		X	X	X				X			5	X	X	X	X		X	X		6									0	4	
Cedar Swamp Brook	15715	Mansfield	11/18/2013				X	X		X						3	X	X				X	X		4									0	0	
Choggam Brook	18620	Kent	10/25/2013				X						X			2	X	X					X		3									0	1	
Clapboard Oak Brook	18216	Bridgewater	9/28/2013		X		X					X				3	X	X	X	X		X	X		6										0	3
Cobble Brook	15245	Kent	9/30/2013		X		X				X					3	X	X	X	X		X	X		6										0	1
Cranberry Meadow Brook	18405	East Lyme	10/19/2013					X							X	2			X	X		X	X	X	5									0	4	
Deep Brook	14172	Newtown	9/28/2013		X											1	X		X	X					3							X		1	0	
Deep Brook	16038	Newtown	9/28/2013		X											1	X	X	X	X		X	X		6		X							1	1	
Deep Brook	16039	Newtown	9/28/2013		X											1	X	X	X	X					4									0	1	
Deep Brook	16253	Newtown	9/28/2013		X											1	X	X	X	X			X		5									0	3	

Stream Name	Site #	Town	Date	1 - Drunella	2 - Isonychia	3 - Epeorus	4 - Peltoperlidae	5A - Perlidae	5B - Pteronarcys	5C - Misc. Stonefly	6A - Glossosoma	6B - Apatania	7 - Rhyacophila	8A - Brachycentrus	8B - Lepidostoma	Total Most	9 - Hydropsychidae	10 - Chimarra	11 - Stenonema	12 - Psephenus	13A - Corydalus	13B - Nigronia	14A - Dragonfly	14B - Damselfly	Total Moderate	15A - Arthropoda	15B - Isopoda	15C - Leech	15D - Midge	15E - Simuliidae	15F - Snail	15G - Worm	Total Least	Total Other
Deep Brook, E. Branch	18512	Kent	10/3/2013		X		X	X	X							4	X	X	X	X			X		5								0	1
Deep Brook, W. Branch	18511	Kent	9/26/2013				X	X		X						3	X	X	X	X		X	X		6			X					1	6
Dickinson Creek	17765	Colchester	10/27/2013													0	X	X							2								0	3
Doolittle Lake Brook Trib.	17964	NORFOLK	10/13/2013							X						1	X	X							2								0	1
East Aspetuck River	18055	New Milford	10/15/2013					X		X	X					2	X		X	X		X			4	X							1	5
East Aspetuck River	18407	Washington	11/9/2013					X		X	X					3	X		X		X				3					X			1	0
East Branch Eightmile River	18392	Lyme	10/26/2013	X				X								2	X	X	X		X				4								0	0
East Spring Brook	18396	Bethlehem	9/21/2013							X		X				2	X	X	X						3	X					X		2	1
East Spring Brook	17321	Bethlehem	10/19/2013	X				X	X	X	X	X	X			6	X	X	X		X				4	X							1	3
Eightmile River	18408	Southington	10/5/2013					X		X		X				3	X	X	X	X					4								0	0
Eightmile River	18518	East Haddam	10/26/2013					X				X	X			3	X	X	X		X	X			5			X					1	3
FARMINGTON RIVER	14841	Canton	9/30/2013	X				X								2	X	X	X	X	X	X			6			X					1	1
Fawn Brook	16440	Hebron	10/20/2013					X		X			X			3	X	X	X	X		X	X		6								0	1
Fawn Brook	18409	Marlborough	9/7/2013	X	X			X				X				4	X		X	X	X	X	X		5								0	2
Fourmile River	17322	East Lyme	10/12/2013										X			1	X	X	X		X	X			5	X		X		X		3	2	
French Brook	15592	Bolton	11/17/2013				X	X		X						3	X		X		X	X			4								0	2
French River	18399	Thompson	9/27/2013	X				X								2	X	X		X	X				4	X							1	1
Furnace Brook	15164	Cornwall	9/7/2013	X			X	X	X							4	X	X	X	X	X				5						X		1	2
Gages Brook	15316	Tolland	9/28/2013					X								1	X	X	X	X		X	X	X	7	X							1	1
Halfway River	16421	Newtown	9/28/2013	X				X								2	X		X	X		X			4			X					1	1
Harbor Brook	15197	Meriden	10/21/2013													0	X	X	X	X					4	X		X					2	0
Harris Brook	15313	Salem	10/26/2013	X				X		XX			X	X		6	X	X	X		X	X	X		6								0	4
Hewitt Brook	14732	Preston	10/11/2013	X				X								2	X	X		X	X	X			5								0	4
Hewitt Brook	18412	Preston	10/1/2013					X						X		2	X	X	X		X	X			5								0	1
Jacks Brook	17742	Roxbury	9/28/2013	X				X	X							3	X	X	X				X		4								0	2
Jeremy River	18619	Hebron	10/12/2013				X	X								2	X	X	X		X		X		5								0	0
Jeremy River (Group 1)	16167	Colchester	10/24/2013					X		X						2	X		X		X				3								0	1
Jeremy River (Group 2)	16167	Colchester	10/24/2013	X				X		X	X					4	X	X	X	X	X	X	X		7			X		X		2	0	
Jeremy River (Group 3)	16167	Colchester	10/24/2013					X		X						2	X		X		X				3								0	1
Jeremy River (Group 4)	16167	Colchester	10/24/2013	X				X								2		X	X		X	X			4			X		X			2	0
Joe Clark Brook	18539	LEDYARD	10/4/2013					X				X				2	X	X		X		X	X		5	X							1	2

Stream Name	Site #	Town	Date	1 - Drunella	2 - Isonychia	3 - Epeorus	4 - Peltoperlidae	5A - Perlidae	5B - Pteronarys	5C - Misc. Stonefly	6A - Glossosoma	6B - Apatania	7 - Rhyacophila	8A - Brachycentrus	8B - Lepidostoma	Total Most	9 - Hydropsychidae	10 - Chimarra	11 - Stenonema	12 - Psephenus	13A - Corydalus	13B - Nigronia	14A - Dragonfly	14B - Damselfly	Total Moderate	15A - Arthropoda	15B - Isopoda	15C - Leech	15D - Midge	15E - Simuliidae	15F - Snail	15G - Worm	Total Least	Total Other		
Judd Brook	15045	Colchester	9/30/2013		X		X						X		3	X	X	X			X	X			5						X	1	2			
Kent Falls Brook	17639	Kent	10/10/2013		X	X	X	X				X			5	X	X	X	X		X				5								0	2		
Kohanza Brook	16089	Danbury	10/12/2013	X	X		X	X		X					5	X									1			X		X		2	4			
LAKE WARAMAUG BROOK	16795	Warren	10/2/2013	X			X					X			3	X	X	X	X	X	X	X			6			X					1	1		
Latimer Brook	18413	East Lyme	9/26/2013				X						X		2	X	X	X			X	X	X		6	X							1	3		
Latimer Brook	18495	East Lyme	9/26/2013				X						X		2	X	X	X	X			X	X		6	X							1	2		
Lebanon Brook	16088	Woodstock	10/25/2013				X								1	X	X	X	X		X	X			6								0	1		
Little River	16085	Putnam	9/28/2013	X			X								2	X	X		X	X		X			5			X		X			2	1		
Little River	16428	Redding	10/6/2013	X											1	X	X	X	X		X				5								0	2		
Little River	17379	Redding	10/6/2013	X								X			2	X	X	X	X		X				5					X			1	1		
Little River	14275	Woodstock	10/10/2013	X			X								2	X				X	X				3								0	2		
Macedonia Brook	15845	Kent	9/23/2013	X		X	X	X							4	X	X	X	X		X	X			6			X					1	3		
Mashamoquet Brook	15249	Pomfret	10/12/2013				X								1	X	X	X		X	X				5			X					1	2		
Mashamoquet Brook	15599	Pomfret	10/12/2013	X											1	X		X	X		X				4									0	3	
Merryll Brook	18618	New Milford	10/1/2013	X			X								2	X	X	X	X		X				5			X					1	2		
Mixville Brook	18610	Prospect	10/5/2013				X								1	X	X	X		X	X	X			6			X	X	X			3	0		
Mixville Brook	18609	Prospect	10/5/2013				X					X			2	X	X			X	X	X	X		6			X		X			2	2		
Moodus River	18420	East Haddam	11/9/2013				X		X	X					3	X	X	X		X					4	X					X		2	2		
Mount Hope River	16449	Ashford	9/7/2013	X	X		X								3	X	X	X	X	X	X	X			6						X		1	1		
Muddy River	18611	Wallingford	10/6/2013				X					X			2	X		X	X		X	X			5				X	X			2	4		
Muddy River	15854	Wallingford	10/5/2013				X		X	X					3	X	X	X	X	X	X	X	X		7	X				X	X		3	5		
Natchaug River	15394	Eastford	9/21/2013	X			X								2	X	X	X	X		X	X			6								0	4		
Nod Brook	15319	Avon	10/1/2013	X			X					X	X		4	X	X		X						3			X					1	3		
Nonewaugh River	14355	Woodbury	9/21/2013	X			X		X						3	X	X	X	X						4	X								1	2	
North Brook	18505	Colebrook	10/13/2013	X					X			X			3	X	X			X	X				4									0	3	
Oil Mill Brook	16930	Waterford	10/15/2013				X		X						2	X	X			X	X				3									0	1	
PATTAGANSETT RIVER	18422	East Lyme	9/21/2013												0	X	X	X	X		X	X			6	X								1	3	
PINE BROOK	16438	Colchester	11/3/2013				X	X					X		3	X	X	X		X	X				5									0	3	
PINE BROOK	16968	East Hampton	11/16/2013	X			X	X					X	X	5	X	X		X	X		X	X		4									0	3	
Pomperaug River	15025	Southbury	10/19/2013		X		X		X	X	X				5	X	X	X							3	X		X	X					3	2	
Pomperaug River	15388	Southbury	10/19/2013		X		X		X	X	X	X			6	X	X	X	X			X			5	X									1	2

Stream Name	Site #	Town	Date	1 - Drunella	2 - Isonychia	3 - Epeorus	4 - Peltoperlidae	5A - Perlidae	5B - Pteronarys	5C - Misc. Stonefly	6A - Glossosoma	6B - Apatania	7 - Rhyacophila	8A - Brachycentrus	8B - Lepidostoma	Total Most	9 - Hydropsychidae	10 - Chimarra	11 - Stenonema	12 - Psephenus	13A - Corydalus	13B - Nigronia	14A - Dragonfly	14B - Damselfly	Total Moderate	15A - Arthropoda	15B - Isopoda	15C - Leech	15D - Midge	15E - Simuliidae	15F - Snail	15G - Worm	Total Least	Total Other	
Pomperaug River	16036	Woodbury	9/21/2013		X			X			X					3	X	X		X	X		X		5	X							1	4	
Pomperaug River	17325	Southbury	10/19/2013		X			X		X	X	X	X			6	X	X		X		X			4	X					X		2	2	
Pond Brook	15581	Newtown	9/28/2013					X			X					2	X		X	X		X			4				X				1	1	
Pond Brook	16425	Newtown	9/28/2013		X			X								2	X	X		X		X			4	X								1	0
POND MOUNTAIN BROOK	18621	Kent	10/11/2013		X		X	X					X			4	X	X				X	X		4								0	2	
Pootatuck River	14406	Newtown	9/28/2013		X			X					X			3	X	X	X	X		X	X		6	X					X		2	2	
Pootatuck River	15280	Newtown	9/28/2013		X			X			X		X			4	X	X	X	X		X			5	X							1	1	
Railroad Brook	17971	Bolton	11/17/2013													0	X	X	X					X	4								0	2	
Rattlesnake Hill Brook	15572	Canton	10/12/2013					X					X			2		X	X			X			3								0	1	
RAYMOND BROOK	16999	Hebron	9/7/2013		X			X						X		3	X	X	X	X	X	X	X		7						X		1	2	
Rippowam River (Mill River)	18494	Stamford	9/23/2013													0									0		X						1	1	
Salmon River	14440	East Hampton	9/7/2013		X	X		X		X	X		X	X	X	8	X	X	X	X		X	X		6					X			1	4	
Sandy Brook	15844	Barkhamsted	9/28/2013		X			X					X			3	X	X		X					3								0	1	
Sandy Brook	14843	Colebrook	10/13/2013		X			X	X	X	X					5	X	X	X				X		4								0	1	
Saugatuck River	14444	Redding	10/6/2013													0	X	X	X			X			4	X							1	0	
Saugatuck River	16430	Redding	10/6/2013		X											1	X		X		X				3					X			1	0	
Saugatuck River	15370	Weston	10/5/2013		X											1	X	X	X	X	X				5								0	0	
Saugatuck River	14445	Westport	10/5/2013		X			X								2	X	X	X	X					4	X							1	0	
Shepaug River	17038	Roxbury	9/28/2013		X			X						X		3		X	X	X	X				4			X					1	1	
Shepaug River	17412	Washington	9/28/2013		X			X								2	X			X			X		3								0	1	
Shepaug River	14710	Washington	10/1/2013		X			X						X		3	X	X	X	X		X	X		6								0	1	
Shepaug River	15887	Washington	9/30/2013		X			X		X						3	X	X	X	X	X	X			6								0	2	
Shepaug River	15127	Washington	9/28/2013		X			X		X				X		4	X		X	X	X				4			X					1	1	
Shepaug River	16254	Washington	9/28/2013		X			X		X				X		4	X			X	X	X			4						X		1	3	
Spoonshop Brook	15201	Meriden	10/21/2013													0	X	X	X						3	X							1	2	
Sprain Brook	16431	Woodbury	9/21/2013		X			X		X	X					4	X	X	X			X			4								0	1	
Still River	15713	Woodstock	10/19/2013		X		X			X						3	X	X	X	X		X	X		6			X	X				2	2	
Stony Brook	17317	Waterford	11/6/2013					X		X						2	X	X	X			X	X	X	6	X		X					2	1	
Stony Brook	17531	Waterford	11/6/2013					X		X						2						X			1	X							1	3	
Tankerhoosen River	15206	Vernon	9/28/2013		X											1	X	X	X						3	X		X					2	2	
Tankerhoosen River	14469	Vernon	9/28/2013		X			X		X						3	X	X	X	X					4				X				1	4	

Stream Name	Site #	Town	Date	1 - Drunella	2 - Isonychia	3 - Epeorus	4 - Peltoperlidae	5A - Perlidae	5B - Pteronarcys	5C - Misc. Stonefly	6A - Glossosoma	6B - Apatania	7 - Rhyacophila	8A - Brachycentrus	8B - Lepidostoma	Total Most	9 - Hydropsychidae	10 - Chimarra	11 - Stenonema	12 - Psephenus	13A - Corydalus	13B - Nigronia	14A - Dragonfly	14B - Damselfly	Total Moderate	15A - Arthropoda	15B - Isopoda	15C - Leech	15D - Midge	15E - Simuliidae	15F - Snail	15G - Worm	Total Least	Total Other
Tankerhoosen River	14470	Vernon	9/28/2013					X	X				X			3	X	X	X	X					4	X					X	X	3	2
Tankerhoosen River	15205	Vernon	9/28/2013						X		X		X			3	X	X	X			X	X		5	X							1	3
Transylvania Brook	14711	Southbury	11/15/2013	X						XXX		X				5	X	X	X				X		4			X			X		2	5
TURRILL BROOK	18063	Roxbury	9/28/2013				X	X			X	X				4	X	X	X						3		X	X	X		X		4	2
Umpawaug Pond Brook	16064	Redding	10/6/2013	X				X								2	X	X	X	X			X	X	6	X							1	2
Weekeepeemee Brook	15530	Woodbury	9/21/2013	X							X	X			X	4	X	X	X				X		4			X					1	3
Weekeepeemee River	18613	Bethlehem	9/21/2013	X		X	X	X					X			5	X	X	X	X		X			5			X					1	4
West Aspetuck River	18614	Kent	9/12/2013					X								1	X	X			X	X	X		5	X					X		2	5
West Aspetuck River	18617	Kent	9/22/2013	X	X			X		X						4	X	X	X				X		4			X	X				2	2
West Aspetuck River	18616	New Milford	9/8/2013	X				X								2	X		X	X		X			4								0	2
West Aspetuck River	18615	New Milford	11/26/2013	X			X		XXX	X						6	X								1	X							1	3
W. Branch Saugatuck River	15365	Weston	10/5/2013					X								1						X	X		2					X			1	1
W. Branch Saugatuck River	16045	Weston	10/5/2013					X								1	X	X	X					X	4								0	1
W. Branch Saugatuck River	16264	Weston	10/5/2013					X								1	X	X			X	X		X	4	X							1	0
W. Branch Saugatuck River	17332	Weston	10/6/2013	X				X								2	X	X	X			X			4	X							1	0
W. Branch Saugatuck River	15364	Westport	10/5/2013	X				X								2	X	X	X	X			X		5	X	X						2	2
West Redding Brook	17335	Danbury	10/6/2013					X								1	X	X	X			X			4								0	1
WEWAKA BROOK	18431	Bridgewater	9/28/2013	X	X	X	X		X		X					6	X	X	X	X		X	X		6			X					1	4
Womenshenuck Brook	18513	Kent	9/28/2013	X		X	X						X			4	X	X	X	X		X	X		6								0	2
Yantic River	14735	Norwich	10/8/2013	X						X						2	X	X			X				3			X			X		2	0

Table 5. 2013 RBV Program Results: 4+ Most Wanted Types Present. Thirty (30) of the 2013 RBV voucher samples contained 4 or more “Most Wanted” types. The data are sorted by decreasing total most wanted types, stream name, and then collection date.

Stream Name	Site #	Town	Group/Organization	Date	# Most Wanted
Salmon River	14440	East Hampton	Salmon River Watershed Partnership	09/07/13	8
Blackledge River	14137	Marlborough	Salmon River Watershed Partnership	09/14/13	6
East Spring Brook	17321	Woodbury	Pomperaug River Watershed Coalition	10/19/13	6
Harris Brook	15313	Salem	Three Rivers Community College	10/26/13	6
Pomperaug River	15388	Southbury	Pomperaug River Watershed Coalition	10/19/13	6
Pomperaug River	17325	Southbury	Pomperaug River Watershed Coalition	10/19/13	6
West Aspetuck River	18615	New Milford	Housatonic Valley Association	11/26/13	6
Wewaka Brook	18431	Bridgewater	Friends of the Lake	09/28/13	6
Bantam River	15138	Litchfield	WAMOGO High School	11/15/13	5
Kent Falls Brook	17639	Kent	The Marvelwood School	10/10/13	5
Morgan Brook	16089	Barkhamsted	Farmington River Watershed Association	10/12/13	5
Pine Brook	16968	East Hampton	Salmon River Watershed Partnership	11/16/13	5
Pomperaug River	15025	Southbury	Pomperaug River Watershed Coalition	10/19/13	5
Sandy Brook	14843	Colebrook	Farmington River Watershed Association	10/13/13	5
Weekeepeemee River	18613	Bethlehem	Pomperaug River Watershed Coalition	09/21/13	5
Battleswamp Brook	18493	Roxbury	Roxbury Conservation Commission	09/28/13	4
Bull Mountain Brook	18510	Kent	Kent Conservation Commission	09/28/13	4
Center Brook	16566	Colebrook	Farmington River Watershed Association	10/13/13	4
Fawn Brook	18409	Marlborough	Salmon River Watershed Partnership	09/07/13	4
Furnace Brook	15164	Cornwall	Housatonic Valley Association	09/07/13	4
Jeremy River	16167	Colchester	RHAM High School (w/ Salmon River Watershed Partnership)	10/24/13	4
Macedonia Brook	15845	Kent	The Marvelwood School	09/23/13	4
Nod Brook	15319	Avon	Farmington River Watershed Association	10/01/13	4
Pond Mountain Brook	18621	Kent	The Marvelwood School	10/11/13	4
Pootatuck River	15280	Newtown	Candlewood Valley Trout Unlimited	09/28/13	4
Shepaug River	15127	Washington	Housatonic Valley Association	09/28/13	4
Shepaug River	16254	Washington	Roxbury Conservation Commission	09/28/13	4
Sprain Brook	16431	Woodbury	Pomperaug River Watershed Coalition	09/21/13	4
Transylvania Brook	14711	Southbury	Pomperaug River Watershed Coalition	11/15/13	4
Womenshenuck Brook	18513	Kent	Kent Conservation Commission	09/28/13	4

Table 6. 2013 RBV Program Results: 3 Most Wanted Types Present. Thirty-five (35) of the 2013 RBV voucher samples contained 3 “Most Wanted” types. The data are sorted alphabetically by organization, stream name, and then collection date.

Group/Organization	Stream Name	Site #	Town	Date	# Most Wanteds
Bolton Conservation Commission	French Brook	1534	Bolton	11/17/13	3
Candlewood Valley Trout Unlimited	Pootatuck River	281	Newtown	09/28/13	3
CT Audubon Society	Still River	1658	Woodstock	10/19/13	3
E.O. Smith Depot Campus	Cedar Swamp Brook	1660	Mansfield	11/18/13	3
Farmington River Watershed Association	North Brook	6896	Colebrook	10/13/13	3
Farmington River Watershed Association	Still River	1796	Barkhamsted	09/28/13	3
Friends of the Lake	Clapboard Oak Brook	6693	Bridgewater	09/28/13	3
Friends of the Lake	Turrill Brook	6510	Roxbury	09/28/13	3
Housatonic Valley Association	East Aspetuck River	6745	Washington	11/09/13	3
Housatonic Valley Association	Lake Waramaug Brook	5355	Warren	10/02/13	3
Housatonic Valley Association	West Aspetuck River	6910	Kent	09/22/13	3
Kent Conservation Commission	Bull Mountain Brook	6901	Kent	09/28/13	3
Kent Conservation Commission	Cobble Brook	1161	Kent	09/30/13	3
Pomperaug River Watershed Coalition	Nonnewaug River	230	Woodbury	09/21/13	3
Pomperaug River Watershed Coalition	Nonnewaug River	770	Woodbury	09/21/13	3
Pomperaug River Watershed Coalition	Pomperaug River	1990	Southbury	09/21/13	3
Pomperaug River Watershed Coalition	Weekeepeemee River	1468	Woodbury	09/21/13	3
Quinnipiac River Watershed Association	Eightmile River	6769	Southington	10/05/13	3
Quinnipiac River Watershed Association	Muddy River	1806	Wallingford	10/05/13	3
Roxbury Conservation Commission	Jacks Brook	6330	Roxbury	09/28/13	3
Roxbury Conservation Commission	Shepaug River	5599	Roxbury	09/28/13	3
Salmon River Watershed Partnership	Fawn Brook (Upper)	2781	Hebron	10/20/13	3
Salmon River Watershed Partnership	Judd Brook	954	Hebron	09/30/13	3
Salmon River Watershed Partnership	Moodus River	6752	East Haddam	11/09/13	3
Salmon River Watershed Partnership	Pine Brook	2779	Colchester	11/03/13	3
Salmon River Watershed Partnership	Raymond Brook	5560	Hebron	09/07/13	3
The Last Green Valley	Mount Hope River	2791	Ashford	09/07/13	3
The Marvelwood School	Deep Brook, East Branch Headwater	6899	Kent	10/03/13	3
The Marvelwood School	Deep Brook, West Branch Headwater	6898	Kent	09/26/13	3
Three Rivers Community College	Eightmile River	6902	East Haddam	10/26/13	3

Table 6 (continued). 2013 RBV Program Results: 3 Most Wanted Types Present

Group/Organization	Stream Name	Site #	Town	Date	# Most Wanted
Vernon Conservation Commission	Tankerhoosen River	344	Vernon	09/28/13	3
Vernon Conservation Commission	Tankerhoosen River	345	Vernon	09/28/13	3
Vernon Conservation Commission	Tankerhoosen River	1120	Vernon	09/28/13	3
Washington Montessori School	Shepaug River	1839	Washington	09/30/13	3
Washington Montessori School	Shepaug River	596	Washington	10/01/13	3

Interpreting Your RBV Results

Table 4 provides an overview for how you can interpret your RBV results. **In general sites with four or more 'Most Wanted' macroinvertebrate types are indicative of excellent water quality conditions.** (These results provide a more accurate signal on smaller water bodies, however, as larger systems such as 3rd and 4th order streams are sometimes likely to have a greater number of taxa simply by the nature of their size.) DEEP will integrate these '4 or more' results into the biennial water quality assessment process.



DEEP will complete its next round of water quality assessments based upon 2013 and 2014 data. **Any sites that were monitored for the first time with RBV in 2013 and yielded 4 or more Most Wanted types are high priority candidate sites for re-monitoring in 2014.**

Katia Shortt and Tyler Brindley collect a sample from East Spring Brook in Woodbury. *Photo courtesy of the Pomperaug River Watershed Coalition.*

Vouchers with three of the 'Most Wanted' macroinvertebrate types indicate good water quality. However, these sites cannot be used to definitely say that the site is supporting water quality standards. Volunteers are encouraged to revisit these sites during the 2014 season if they meet the site criteria noted on page 7. Sites at which 3 'Most Wanted' types were found in 2013 and for which predicted MMI scores are high (Figure 6, Appendix A), should be considered high priority for re-monitoring in fall 2014.

Fewer than three or the absence of 'Most Wanted' types in a voucher does not necessarily mean the water quality is low. **Samples with 3 or fewer types in the 'Most Wanted' category do not indicate impairment.** These sites may actually be characterized by good water quality, however these sites may not be suitable for RBV-based monitoring (see page 7) or volunteers may not have properly executed the RBV methodology. No assessment was made for 2013 RBV sites for which a voucher was submitted that contained 3 or fewer 'Most Wanted' macroinvertebrate types. If these sites are predicted to have a high MMI score and otherwise meet the criteria noted on page 7, they would be potential candidates (low to moderate priority) for monitoring again in 2014.

Suggested guidelines for revisiting 2013 monitoring sites in 2014 are provided in Table 4. Volunteers are encouraged however to consult with the Volunteer Monitoring Coordinator before selecting their RBV sites whenever possible.

Table 4. A Volunteer’s Guide to Interpretation of RBV Results

# ‘Most Wanted’s’	What Does it Tell Us?
<p>0-2</p>	<p><i>Double check whether this is a good spot to be using the RBV method...</i></p> <p>More information is needed to determine why Most Wanted types were rare in the sample. Reasons may include poor water quality, but it could also be that this just isn’t the right type of site for RBV.</p> <p>DEEP Assessment Decision: No Assessment Made</p> <p>Recommended Volunteer Follow-Up Action: Review the list of RBV site criteria (pg 7) to ensure this site is an appropriate RBV site. If so and 2 Most Wanted’s were found and the MMI model predicts an MMI score greater than 48, assign the site a medium priority for follow-up monitoring.</p> <p>If 1 or no Most Wanted type were found but the MMI score prediction is greater than 48, assign the site a low priority for re-monitoring.</p> <p>If the site does not meet the candidate site requirements, or if 1 or no Most Wanted type were found and the MMI model score prediction is less than 48, volunteers should cease using RBV to monitor this site.</p>
<p>3</p>	<p><i>Not enough to assess this time around, BUT a <u>Very Good Sign</u> – Keep this Site on Your Radar!</i></p> <p>This is a very sign of potentially good to excellent water quality, but unfortunately not statistically enough data for us to list the site as ‘fully supporting’ State water quality standards without additional monitoring. Try not to be disappointed this time around – particularly if this is the first piece of data we gave at this site, this is a really great sign!</p> <p>DEEP Assessment Decision: No Assessment Made... but we’d love you to try again!</p> <p>Recommended Volunteer Follow-Up Action: A high priority candidate for re-monitoring next RBV season. Pay careful attention to net placement and rock scrubbing/substrate kicking during the follow-up monitoring. A second look at that cobble before you toss it might be all it takes to get that 4th Most Wanted type in your sample!</p>
<p>4+</p>	<p><i>Excellent!! Lots of very sensitive macroinvertebrate types were present – you found the treasure!</i></p> <p>This is a very clear signal of excellent water quality as the ‘Most Wanted’ types cannot survive in degraded streams or otherwise low water quality conditions.</p> <p>DEEP Assessment Decision: Considered for ‘Fully Supporting’ State aquatic life use standards. Fully supporting sites will be listed in next Integrated Water Quality Report and submitted to EPA and Congress</p> <p>Recommended Volunteer Follow-Up Action: If this is the first record of excellent water quality at the site, revisit during the following sampling season. If this is a recurring excellent site, revisit every 2 to 3 years.</p>

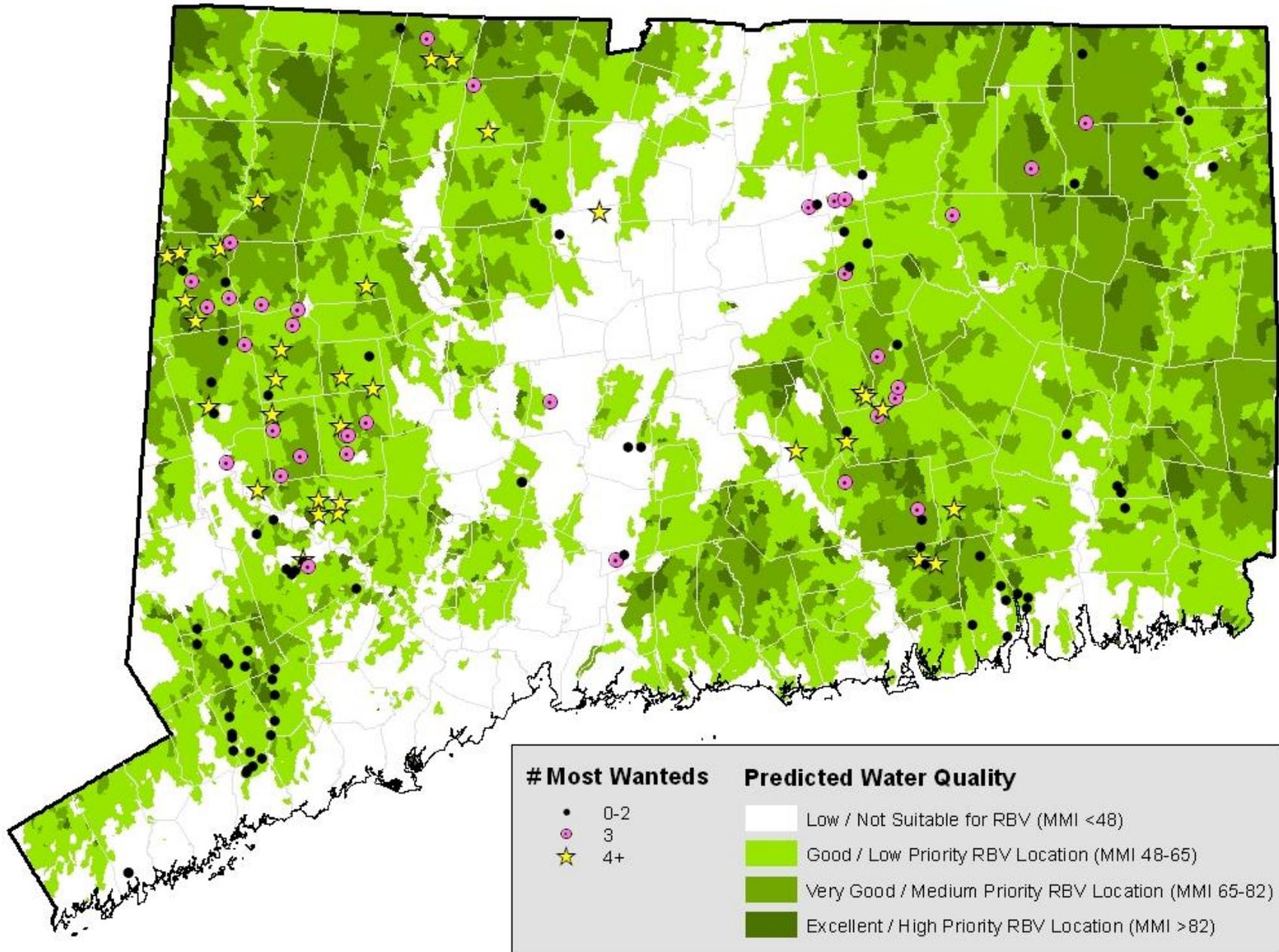


Figure 6. 2013 RBV site results overlain on the MMI model predictions for Connecticut.

Appendix A: 2013 RBV Monitoring Locations by Site Number

The following provides a description of the location where an RBV sample was collected during 2013. Locations are sorted by DEEP Station ID (site #). The number of Most Wanted types ('# MWs') found in 2013 and the predicted Macroinvertebrate Multimetric Index score (MMI) are shown at the far right. Sites with 2 or 3 Most Wanted types and a high predicted MMI score are good candidate sites for follow-up monitoring in 2014 if they meet the site criteria outlined on page 7.

Site #	Stream Name	Official Location Description	Town	Latitude	Longitude	# MWs	MMI
14126	Aspetuck River	DS Bayberry Lane	WESTPORT	41.186400	-73.342900	1	55
14137	Blackledge River	US Confluence with Lyman Brook	MARLBOROUGH	41.608400	-72.426300	6	63
14172	Deep Brook	US mouth near Pootatuck River	NEWTOWN	41.413100	-73.282300	1	51
14275	Little River	US Peake Brook Rd	WOODSTOCK	41.928000	-71.933100	2	65
14355	Nonewaug River	DS Rt 47 (Washington Rd)	WOODBURY	41.557500	-73.212200	3	50
14406	Pootatuck River	DS Wasserman Way on Game Club Property	NEWTOWN	41.406400	-73.272000	3	51
14440	Salmon River	DS Rt16 Bridge	EAST HAMPTON	41.552600	-72.449600	8	67
14444	Saugatuck River	DS Rt 107 & Rt 53 Junction	REDDING	41.294500	-73.394800	0	59
14445	Saugatuck River	at DS end of Fly Fishing Only Area (1 Ford Rd)	WESTPORT	41.169300	-73.367000	2	50
14469	Tankerhoosen River	US 100 m mouth at golf land	VERNON	41.820100	-72.503300	3	43
14470	Tankerhoosen River	US Tunnel Rd	VERNON	41.827200	-72.464000	3	40
14710	Shepaug River	US Whittlesey Rd, Adjacent Romford Rd	WASHINGTON	41.683397	-73.298268	3	67
14711	Transylvania Brook	25 meters DS Whale Pass	SOUTHBURY	41.484262	-73.258547	4	48
14732	Poquetanuck Brook	US Schoolhouse Rd.	PRESTON	41.498100	-72.036500	2	65
14735	Yantic River	US West Town Street adjacent to Connecticut Avenue	NORWICH	41.558300	-72.112000	2	57
14841	FARMINGTON RIVER	100 meters US Steele bridge on Town Bridge Rd	CANTON	41.825700	-72.929500	2	56
14843	Sandy Brook	250m US 2nd bridge crossing on Sandy Brk Rd from Rte 8	COLEBROOK	41.990400	-73.058000	5	74
14870	Nonewaug River	US Minortown Rd adjacent to Mill Rd	WOODBURY	41.572800	-73.184400	3	57
15025	Pomperaug River	US Poverty Rd (Ewald Park)	SOUTHBURY	41.481200	-73.225200	5	47
15045	Judd Brook	US old Rd crossing	HEBRON	41.600500	-72.373000	3	65
15127	Shepaug River	in Steep Rock park at river Rd bridge	WASHINGTON	41.622000	-73.325500	4	59
15138	Bantam River	DS Rt 63	LITCHFIELD	41.730500	-73.186800	5	58
15164	Furnace Brook	at Picnic table pool adjacent to Rt 4	CORNWALL	41.827400	-73.355300	4	67
15197	Harbor Brook	US upper footbridge in Brookside Park	MERIDEN	41.545600	-72.785400	0	37
15201	Spoonshop Brook	between bee and Baldwin streets at Carol park	MERIDEN	41.545673	-72.765549	0	40
15205	Tankerhoosen River	DS Bolton Rd	VERNON	41.829400	-72.448200	3	47
15206	Tankerhoosen River	US Small pond (below dobsonville pond)	VERNON	41.823200	-72.493400	1	46
15245	Cobble Brook	500 m us of rte 7	KENT	41.734200	-73.453100	3	71

Site #	Stream Name	Official Location Description	Town	Latitude	Longitude	# MWs	MMI
15249	Mashamoquet Brook	50 meters DS of small dam in state park	POMFRET	41.859200	-71.982800	1	71
15280	Pootatuck River	adjacent Tom's Brook Confluence (DS STP outfall)	NEWTOWN	41.414900	-73.282700	4	45
15312	Beaver Brook	DS bridge at 55-123 Beaver Brook Rd	LYME	41.410000	-72.328900	2	76
15313	Harris Brook	at Mouth	SALEM	41.473300	-72.285100	6	67
15316	Gages Brook	at footbridge on Tolland Agricultural Center Property	TOLLAND	41.857100	-72.424800	1	40
15319	Nod Brook	DS Rt 10	AVON	41.815800	-72.829400	4	46
15324	Blackledge River	500 DS DS Deming Rd	BOLTON	41.751800	-72.445400	2	60
15364	West Branch Saugatuck River	at mouth Glendenning Parking Lot	WESTPORT	41.171800	-73.364300	2	52
15365	W. Branch Saugatuck River	at Old Mill Rd and Cobb's Mill Inn	WESTON	41.208800	-73.388900	1	54
15370	Saugatuck River	at Keene Park Parking Lot	WESTON	41.192700	-73.361700	1	58
15375	Aspetuck River	US Confluence with Saugatuck River at Lyons Plain Rd	WESTPORT	41.176900	-73.357900	1	55
15380	Aspetuck River	at Wells Hill Rd	EASTON	41.228700	-73.324100	2	61
15388	Pomperaug River	adjacent Bent-Of-River Audubon Center off Flagg Swamp Rd	SOUTHBURY	41.467200	-73.258000	6	46
15394	Natchaug River	at Rt 198 entrance to Natchaug SF	EASTFORD	41.845800	-72.097600	2	65
15530	Weekeepeemee River	DS Jacks Bridge Rd at USGS gage	WOODBURY	41.557500	-73.215500	3	58
15572	Rattlesnake Hill Brook	US 200 meters from Dyer Ave.	CANTON	41.818500	-72.918200	2	55
15581	Pond Brook	at Bridge at State Boat Launch (mouth)	NEWTOWN	41.459700	-73.327500	2	50
15592	French Brook	at French Rd	BOLTON	41.744200	-72.448500	3	60
15599	Mashamoquet Brook	end paved section of Rd in state park	POMFRET	41.856100	-71.975800	1	71
15713	Still River	Adjacent to Rt 198 DS of upper crossing	WOODSTOCK	41.915800	-72.077400	3	70
15715	Cedar Swamp Brook	US pedestrian bridge in Shelter Falls park	MANSFIELD	41.811000	-72.284100	3	60
15844	Still River	US Rt 20	BARKHAMSTED	41.960000	-73.020000	3	56
15845	Macedonia Brook	at 1st main picnic area as entering park	KENT	41.762600	-73.493600	4	79
15854	Muddy River	DS route 150 (woodhouse ave) in town park	WALLINGFORD	41.415100	-72.801200	3	47
15887	Shepaug River	Romford Rd	WASHINGTON	41.701900	-73.290400	3	67
16036	Pomperaug River	at town park (the Hollow) off Rte 317	WOODBURY	41.536500	-73.213600	3	52
16038	Deep Brook	at Baldwin Rd	NEWTOWN	41.402900	-73.307900	1	53
16039	Deep Brook	DS old bridge crossing DS Wassermann way	NEWTOWN	41.402300	-73.294700	1	51
16045	W. Branch Saugatuck River	at Stonebridge Rd in Open Space Property	WESTON	41.194700	-73.387500	1	51
16064	Umpawaug Pond Brook	adjacent to Simpaug Turnpike at RR crossing	REDDING	41.316900	-73.444300	2	66
16085	Little River	at Recreation Park Rd	PUTNAM	41.918200	-71.920500	2	62
16088	Lebanon Brook	US Rt 198, North of 198/197 intersection	WOODSTOCK	41.994500	-72.083600	1	79
16089	Morgan Brook	US Rt 318	BARKHAMSTED	41.908600	-73.000700	5	58
16167	Jeremy River	Exit 16 (RT 149)Commuter Parking Lot	COLCHESTER	41.589400	-72.394800	4	62
16242	Fivemile River	at Rt 12 and Huntley Rd on town property	KILLINGLY	41.863800	-71.883400	2	65
16253	Deep Brook	US Bushy Hill Rd in Dickenson park	NEWTOWN	41.397600	-73.300600	1	47
16254	Shepaug River	US route 47 adjacent to Bee Brook Confluence	WASHINGTON	41.656800	-73.318000	4	60
Site #	Stream Name	Official Location Description	Town	Latitude	Longitude	# MWs	MMI

16259	Aspetuck River	at Judges Hollow Rd	FAIRFIELD	41.213200	-73.329100	2	55
16260	Aspetuck River	at Silver Hill Rd	EASTON	41.258900	-73.324700	2	62
16261	Aspetuck River	adjacent Valley Rd pull-off and trail head	EASTON	41.277100	-73.327500	2	62
16264	W. Branch Saugatuck River	at Biscegli Park US Rt 57 and 53	WESTON	41.214000	-73.388900	1	59
16266	Bolton Pond Brook	at Mark Anthony Lane	BOLTON	41.778400	-72.416700	2	57
16421	Halfway River	at Jordan Hill Rd	NEWTOWN	41.381100	-73.201000	2	61
16425	Pond Brook	300m DS Pond Brook Rd and Obtuse Rd	NEWTOWN	41.443200	-73.354500	2	48
16428	Little River	at Cross Highway	REDDING	41.309000	-73.365800	1	59
16430	Saugatuck River	behind Mark Twain Library	REDDING	41.299400	-73.401600	1	63
16431	Sprain Brook	DS Rt 47 adjacent to Papermill Rd	WOODBURY	41.569600	-73.225900	4	62
16438	Pine Brook	at mouth Colchester Fish and Game club property	COLCHESTER	41.580111	-72.399371	3	73
16440	Fawn Brook	DS Rt 66	HEBRON	41.648300	-72.399300	3	73
16449	Mount Hope River	Behind Ashford Town Hall, 250 ft DS Rt 44	ASHFORD	41.863300	-72.161200	3	66
16566	CENTER BROOK	On MT Pisgah Rd	COLEBROOK	41.992200	-73.089400	4	74
16795	Sucker (Lake Waramaug) Brook	150 M US North Shore Rd	WARREN	41.706900	-73.345600	3	63
16930	Oil Mill Brook	50 M US I95 at intersection of 95 north and oil mill rd	WATERFORD	41.375600	-72.190000	2	60
16968	PINE BROOK	Off Chestnut Hill Rd through septage lagoons	EAST HAMPTON	41.542500	-72.528000	5	63
16999	RAYMOND BROOK	DS Grayville Rd	HEBRON	41.612800	-72.368100	3	68
17038	SHEPAUG RIVER	At Hodge Park	ROXBURY	41.563100	-73.327800	3	59
17317	Stony Brook	at Rt 1	WATERFORD	41.359400	-72.175300	2	51
17321	East Spring Brook	DS Nonewaug Rd and Porter Hill Rd	BETHLEHEM	41.612100	-73.176100	6	56
17322	Fourmile River	at spring rock Rd	EAST LYME	41.339000	-72.259200	1	61
17325	Pomperaug River	US Flood Bridge Rd	SOUTHBURY	41.469403	-73.229214	6	51
17332	W. Branch Saugatuck River	at Godfrey Rd	WESTON	41.233100	-73.393400	2	63
17335	West Redding Brook	behind West Redding Library off Long Ridge Rd	DANBURY	41.334300	-73.442800	1	65
17379	Little River	In front of Greenbush Rd. bridge	REDDING	41.291900	-73.369200	2	61
17412	Shepaug River	1.11 miles US of Judds Bridge Rd at Steep Rock Preserve	WASHINGTON	41.602700	-73.338000	2	59
17531	Stony Brook	US Waterford parkway north of I95	WATERFORD	41.370990	-72.173270	2	51
17639	Kent Falls Brook	DS Dugan Rd	KENT	41.772603	-73.413187	5	77
17742	Jacks Brook	Within RLT Tierney Preserve	ROXBURY	41.532782	-73.285752	3	67
17765	Dickinson Creek	(6587) 100 meters below airline trail viaduct	COLCHESTER	41.563127	-72.449514	1	64
17964	Doolittle Lake Brook Tributary	BEHIND ATON FOREST HOUSE #270 COLEBROOK Rd	NORFOLK	42.025840	-73.136910	1	83
17971	Railroad Brook	at RR trail crossing In Freja Park DS Bolton Notch Pond	BOLTON	41.792200	-72.452990	0	58
18055	West Aspetuck River	at Housatonic Avenue	NEW MILFORD	41.582060	-73.419750	2	52
18063	TURRILL BROOK	UPSTREAM FROM LAKE LILLINONAH	ROXBURY	41.510570	-73.315470	3	73
18139	Aspetuck River, Tributary to	DS Rockhouse Rd just past Ledgeway Rd	REDDING	41.289060	-73.324420	1	63
18216	Clapboard Oak Brook	Near mouth US Lillinonah Lake Rd S	BRIDGEWATER	41.525942	-73.398171	3	62
Site #	Stream Name	Official Location Description	Town	Latitude	Longitude	# MWs	MMI
18392	East Branch Eightmile River	East of Baker Lane	LYME	41.428964	-72.336645	2	66

18396	East Spring Brook	DS Kasson Rd crossing	BETHLEHEM	41.649186	-73.183134	2	62
18399	French River	US of Main Street/Rt 12 bridge	THOMPSON	41.979205	-71.900493	2	49
18405	Cranberry Meadow Brook	DS Grassy Hill Rd (adjacent #80 driveway)	EAST LYME	41.418544	-72.245740	2	65
18407	East Aspetuck River	50m US Rte 202 (at The White Horse)	WASHINGTON	41.661781	-73.370867	3	59
18408	Eightmile River	DS West Center Street	SOUTHINGTON	41.597248	-72.902030	3	43
18409	Fawn Brook	DS Old Hartford Rd/S. Main Street (at mouth)	MARLBOROUGH	41.604581	-72.418750	4	73
18412	Hewitt Brook	Rose Hill WMA on Lincoln Park Rd, US Halville Pond	PRESTON	41.490290	-72.029250	2	66
18413	Latimer Brook	50m US Colony Rd	EAST LYME	41.383973	-72.214290	2	54
18420	Moodus River	Off Red Mill Lane, DS of old bridge	EAST HADDAM	41.504252	-72.449340	3	69
18422	Pattagansett River	DS Brook Rd	EAST LYME	41.325995	-72.205391	0	40
18431	Wewaka Brook	DS Wewaka Brook Rd (near Rt 133/Main Street S)	BRIDGEWATER	41.496188	-73.351480	6	60
18493	Battleswamp Brook	US Judds Bridge Rd	ROXBURY	41.582548	-73.331040	4	61
18494	Rippowam (Mill) River	US Main Street, within Mill River Park	STAMFORD	41.053673	-73.545670	0	42
18494	Rippowam (Mill) River	US Main Street, within Mill River Park	STAMFORD	41.053673	-73.545670	0	42
18495	Latimer Brook	US Rt 1, behind Flanders Plaza	EAST LYME	41.367256	-72.208080	2	54
18505	North Brook	US Beech Hill Rd	COLEBROOK	42.014167	-73.093010	3	74
18510	Bull Mountain Brook	Adjacent 103 Geer Mountain Rd	KENT	41.689559	-73.450090	4	70
18511	Deep Brook, W. Branch	within KLT Tobin Preserve	KENT	41.777521	-73.396950	3	81
18512	Deep Brook, E. Branch	Near kiosk within KLT Tobin Preserve	KENT	41.777969	-73.394330	3	81
18513	Womenshenuck Brook	Adj Rt 341 within Emery Park	KENT	41.712841	-73.465870	4	63
18514	Bull Mountain Brook	Within Iron Mountain Preserve	KENT	41.703229	-73.430340	3	84
18518	Eightmile River	Within Devil's Hopyard State Park	EAST HADDAM	41.473000	-72.339000	3	79
18539	Joe Clark Brook	50m US Thomas Rd	LEDYARD	41.472040	-72.024660	2	60
18609	Mixville Brook	DS Chatfield Rd	PROSPECT	41.504681	-72.947220	2	56
18610	Mixville Brook	US Chatfield Rd	PROSPECT	41.505176	-72.947040	1	56
18611	Muddy River	300m DS Tyler Mill Rd (DS Unnamed tributary)	WALLINGFORD	41.421061	-72.790660	2	47
18613	Weekeepeemee River	Within BLT Two Rivers Preserve, off Rt 132	BETHLEHEM	41.626005	-73.223610	5	62
18614	WEST ASPETUCK RIVER	DS Rt 341	KENT	41.733049	-73.404790	1	75
18615	West Aspetuck River	300M US of Aspetuck Ridge Rd	NEW MILFORD	41.590210	-73.428330	6	65
18616	West Aspetuck River	0.5 mile DS Cherniske Rd	NEW MILFORD	41.665992	-73.406380	2	74
18617	West Aspetuck River	50m US Kent Hollow Rd/Anderson Acres	KENT	41.714121	-73.395080	3	64
18618	Merryall Brook	100m US Chinmoy Rd	NEW MILFORD	41.617046	-73.425470	2	67
18619	Jeremy River	DS Marjorie Circle	HEBRON	41.661949	-72.372260	2	61
18620	Choggam Brook	at Skiff Mountain Rd	KENT	41.744837	-73.469350	2	87
18621	Pond Mountain Brook	DS Fuller Rd	KENT	41.767439	-73.473600	4	69

Appendix B: 2013 RBV Monitoring Locations by Organization

The following provides a description of the location where an RBV sample was collected during 2013. Locations are sorted alphabetically by the collecting group and then by stream name. Abbreviations for organizations are shown in the tables below.

**Sites marked as 'New' indicated sites for which the 2013 RBV results are the first water quality record for that site in the State database. (Many of the sites indicated not new may have been a 'new' site to the organization monitoring it.)*

Organization	Abbreviation
Bolton Conservation Commission	BCC
CT Audubon Society	CAS
Colchester Brownie Troop (w/ SRWP)	CBT/SRWP
Candlewood Valley Trout Unlimited	CVTU
East Lyme Conservation Commission	ELCC
East Lyme High School (w/ ELCC)	ELHS/ELCC
E.O. Smith Depot Campus (w/ TLGV)	EOS/TLGV
Friends of the Lake	FOTL
Farmington River Watershed Association	FRWA
Housatonic Valley Association	HVA
Killingly Agricultural Education Center(w/ TLGV)	KAEC/TLGV
Kent Conservation Commission	KCC
Maloney High School (w/ QRWA)	MHS/QRWA
Mill River Collaborative	MRC

Organization	Abbreviation
Niantic River Watershed Coalition	NRWC
Pomperaug River Watershed Coalition	PRWC
Quinnipiac River Watershed Association	QRWA
Roxbury Conservation Commission	RCC
Staples High School (w/ TNC)	SHS/TNC
Salmon River Watershed Partnership	SRWP
The Last Green Valley	TLGV
The Marvelwood School	TMS
The Nature Conservancy	TNC
Three Rivers Community College	TRCC
Vernon Conservation Commission	VCC
Woodstock Academy (w/ TLGV)	WA/TLGV
WAMOGO High School	WHS
Washington Montessori School	WMS

Site #	New?	Organization	Stream Name	Town	Watershed	Lat	Long
15324	No	BCC	Blackledge River	BOLTON	Blackledge River	41.751800	-72.445400
16266	No	BCC	Bolton Pond Brook	BOLTON	Hop River	41.778400	-72.416700
15592	No	BCC	French Brook	BOLTON	Blackledge River	41.744200	-72.448500
17971	No	BCC	Railroad Brook	BOLTON	Tankerhoosen River	41.792200	-72.452990
14172	No	CVTU	Deep Brook	NEWTOWN	Deep Brook	41.413100	-73.282300
16038	No	CVTU	Deep Brook	NEWTOWN	Deep Brook	41.402900	-73.307900
16039	No	CVTU	Deep Brook	NEWTOWN	Deep Brook	41.402300	-73.294700
16253	No	CVTU	Deep Brook	NEWTOWN	Deep Brook	41.397600	-73.300600
16421	No	CVTU	Halfway River	NEWTOWN	Halfway River	41.381100	-73.201000
15581	No	CVTU	Pond Brook	NEWTOWN	Pond Brook	41.459700	-73.327500
16425	No	CVTU	Pond Brook	NEWTOWN	Pond Brook	41.443200	-73.354500

Site #	New?	Organization	Stream Name	Town	Watershed	Lat	Long
14406	No	CVTU	Pootatuck River	NEWTOWN	Pootatuck River	41.406400	-73.272000
15280	No	CVTU	Pootatuck River	NEWTOWN	Pootatuck River	41.414900	-73.282700
17765	No	CBT/SRWP	Dickinson Creek	COLCHESTER	Dickinson Creek	41.563127	-72.449514
18399	No	CAS	French River	THOMPSON	French River	41.979205	-71.900493
16088	No	CAS	Lebanon Brook	WOODSTOCK	Lebanon Brook	41.994500	-72.083600
16085	No	CAS	Little River	PUTNAM	Little River	41.918200	-71.920500
15249	No	CAS	Mashamoquet Brook	POMFRET	Mashamoquet Brook	41.859200	-71.982800
15599	No	CAS	Mashamoquet Brook	POMFRET	Mashamoquet Brook	41.856100	-71.975800
15394	No	CAS	Natchaug River	EASTFORD	Natchaug River	41.845800	-72.097600
15713	No	CAS	Still River	WOODSTOCK	Still River	41.915800	-72.077400
15715	No	EOS/TLGV	Cedar Swamp Brook	MANSFIELD	Willimantic River	41.811000	-72.284100
17322	No	ELCC	Fourmile River	EAST LYME	Fourmile River	41.339000	-72.259200
18422	No	ELCC	Pattagansett River	EAST LYME	Pattagansett River	41.325995	-72.205391
18405	No	ELHS/ELCC	Cranberry Meadow Brook	EAST LYME	Latimer Brook	41.418544	-72.245740
16566	No	FRWA	CENTER BROOK	COLEBROOK	Sandy Brook	41.992200	-73.089400
17964	No	FRWA	Doolittle Lake Brook tributary	NORFOLK	Sandy Brook	42.025840	-73.136910
14841	No	FRWA	FARMINGTON RIVER	CANTON	Farmington River	41.825700	-72.929500
16089	No	FRWA	Morgan Brook	BARKHAMSTED	Morgan Brook	41.908600	-73.000700
15319	No	FRWA	Nod Brook	AVON	Nod Brook	41.815800	-72.829400
18505	Yes	FRWA	North Brook	COLEBROOK	Sandy Brook	42.014167	-73.093010
15572	No	FRWA	Rattlesnake Hill Brook	CANTON	Farmington River	41.818500	-72.918200
14843	No	FRWA	Sandy Brook	COLEBROOK	Sandy Brook	41.990400	-73.058000
15844	No	FRWA	Still River	BARKHAMSTED	Still River	41.960000	-73.020000
18216	No	FOTL	Clapboard Oak Brook	BRIDGEWATER	Housatonic River	41.525942	-73.398171
18063	No	FOTL	TURRILL BROOK	ROXBURY	Shepaug River	41.510570	-73.315470
18431	No	FOTL	Wewaka Brook	BRIDGEWATER	Housatonic River	41.496188	-73.351480
18407	No	HVA	East Aspetuck River	WASHINGTON	East Aspetuck River	41.661781	-73.370867
15164	No	HVA	Furnace Brook	CORNWALL	Furnace Brook	41.827400	-73.355300
16795	No	HVA	Lake Waramaug Brook ("Sucker Brook")	WARREN	East Aspetuck River	41.706900	-73.345600
18618	Yes	HVA	Merryall Brook	NEW MILFORD	Merryall Brook	41.617046	-73.425470
15127	No	HVA	Shepaug River	WASHINGTON	Shepaug River	41.622000	-73.325500
18055	No	HVA	West Aspetuck River	NEW MILFORD	West Aspetuck River	41.582060	-73.419750
18614	Yes	HVA	WEST ASPETUCK RIVER	KENT	West Aspetuck River	41.733049	-73.404790
18615	Yes	HVA	West Aspetuck River	NEW MILFORD	West Aspetuck River	41.590210	-73.428330

Site #	New?	Organization	Stream Name	Town	Watershed	Lat	Long
18616	Yes	HVA	West Aspetuck River	NEW MILFORD	West Aspetuck River	41.665992	-73.406380
18617	Yes	HVA	West Aspetuck River	KENT	Hockanum River	41.714121	-73.395080
18510	Yes	KCC	Bull Mountain Brook	KENT	Womenshenuck Brook	41.689559	-73.450090
18514	Yes	KCC	Bull Mountain Brook	KENT	Womenshenuck Brook	41.703229	-73.430340
15245	No	KCC	Cobble Brook	KENT	Cobble Brook	41.734200	-73.453100
18513	Yes	KCC	Womenshenuck Brook	KENT	Womenshenuck Brook	41.712841	-73.465870
16242	No	KAEC/TLGV	Fivemile River	KILLINGLY	Fivemile River	41.863800	-71.883400
15197	No	MHS/QRWA	Harbor Brook	MERIDEN	Harbor Brook	41.545600	-72.785400
18494	Yes	MRC	Rippowam River (Mill River)	STAMFORD	Rippowam River	41.053673	-73.545670
18495	Yes	NRWC	Latimer Brook	EAST LYME	Latimer Brook	41.367256	-72.208080
18413	No	NRWC	Latimer Brook	EAST LYME	Latimer Brook	41.383973	-72.214290
16930	No	NRWC	Oil Mill Brook	WATERFORD	Oil Mill Brook	41.375600	-72.190000
17317	No	NRWC	Stony Brook	WATERFORD	Niantic River	41.359400	-72.175300
17531	No	NRWC	Stony Brook	WATERFORD	Niantic River	41.370990	-72.173270
17321	No	PRWC	East Spring Brook	BETHLEHEM	East Spring Brook	41.612100	-73.176100
18396	No	PRWC	East Spring Brook	BETHLEHEM	East Spring Brook	41.649186	-73.183134
14870	No	PRWC	Nonewaug River	WOODBURY	Nonewaug River	41.572800	-73.184400
14355	No	PRWC	Nonewaug River (Nonnewaug River)	WOODBURY	Nonewaug River	41.557500	-73.212200
15025	No	PRWC	Pomperaug River	SOUTHBURY	Pomperaug River	41.481200	-73.225200
15388	No	PRWC	Pomperaug River	SOUTHBURY	Pomperaug River	41.467200	-73.258000
16036	No	PRWC	Pomperaug River	WOODBURY	Pomperaug River	41.536500	-73.213600
17325	No	PRWC	Pomperaug River	SOUTHBURY	Pomperaug River	41.469403	-73.229214
16431	No	PRWC	Sprain Brook	WOODBURY	Nonewaug River	41.569600	-73.225900
14711	No	PRWC	Transylvania Brook	SOUTHBURY	Transylvania Brook	41.484262	-73.258547
15530	No	PRWC	Weekeepeemee River	WOODBURY	Weekeepeemee River	41.557500	-73.215500
18613	Yes	PRWC	Weekeepeemee River	BETHLEHEM	Weekeepeemee River	41.626005	-73.223610
18408	No	QRWA	Eightmile River	SOUTHINGTON	Eightmile River	41.597248	-72.902030
18609	Yes	QRWA	Mixville Brook	PROSPECT	Tenmile River	41.504681	-72.947220
18610	Yes	QRWA	Mixville Brook	PROSPECT	Tenmile River	41.505176	-72.947040
15854	No	QRWA	Muddy River	WALLINGFORD	Muddy River	41.415100	-72.801200
18611	Yes	QRWA	Muddy River	WALLINGFORD	Muddy River	41.421061	-72.790660
15201	No	QRWA	Spoonshop Brook	MERIDEN	Harbor Brook	41.545673	-72.765549
18493	Yes	RCC	Battleswamp Brook	ROXBURY	Shepaug River	41.582548	-73.331040
17742	No	RCC	Jacks Brook	ROXBURY	Jacks Brook	41.532782	-73.285752

Site #	New?	Organization	Stream Name	Town	Watershed	Lat	Long
16254	No	RCC	Shepaug River	WASHINGTON	Shepaug River	41.656800	-73.318000
17038	No	RCC	SHEPAUG RIVER	ROXBURY	Shepaug River	41.563100	-73.327800
17412	No	RCC	Shepaug River	WASHINGTON	Shepaug River	41.602700	-73.338000
14137	No	SRWP	Blackledge River	MARLBOROUGH	Blackledge River	41.608400	-72.426300
16440	No	SRWP	Fawn Brook	HEBRON	Fawn Brook	41.648300	-72.399300
18409	No	SRWP	Fawn Brook	MARLBOROUGH	Fawn Brook	41.604581	-72.418750
16167	No	SRWP	Jeremy River	COLCHESTER	Jeremy River	41.589400	-72.394800
16167	No	SRWP	Jeremy River	COLCHESTER	Jeremy River	41.589400	-72.394800
16167	No	SRWP	Jeremy River	COLCHESTER	Jeremy River	41.589400	-72.394800
16167	No	SRWP	Jeremy River	COLCHESTER	Jeremy River	41.589400	-72.394800
18619	Yes	SRWP	Jeremy River	HEBRON	Jeremy River	41.661949	-72.372260
15045	No	SRWP	Judd Brook	HEBRON	Judd Brook	41.600500	-72.373000
18420	No	SRWP	Moodus River	EAST HADDAM	Moodus River	41.504252	-72.449340
16438	No	SRWP	Pine Brook	COLCHESTER	Jeremy River	41.580111	-72.399371
16968	No	SRWP	PINE BROOK	EAST HAMPTON	Pine Brook	41.542500	-72.528000
16999	No	SRWP	RAYMOND BROOK	HEBRON	Raymond Brook	41.612800	-72.368100
14440	No	SRWP	Salmon River	EAST HAMPTON	Salmon River	41.552600	-72.449600
16428	No	SHS/TNC	Little River	REDDING	Little River	41.309000	-73.365800
14445	No	SHS/TNC	Saugatuck River	WESTPORT	Saugatuck River	41.169300	-73.367000
16045	No	SHS/TNC	West Branch Saugatuck River	WESTON	West Branch Saugatuck River	41.194700	-73.387500
18412	No	TLGV	Hewitt Brook	PRESTON	Poquetanuck Brook	41.490290	-72.029250
18539	Yes	TLGV	Joe Clark Brook	LEDYARD	Poquetanuck Brook	41.472040	-72.024660
16449	No	TLGV	Mount Hope River	ASHFORD	Mount Hope River	41.863300	-72.161200
14732	No	TLGV	Poquetanuck Brook (Hewitt Brook)	PRESTON	Poquetanuck Brook	41.498100	-72.036500
14735	No	TLGV	Yantic River	NORWICH	Yantic River	41.558300	-72.112000
18620	Yes	TMS	Choggam Brook	KENT	Housatonic River	41.744837	-73.469350
18512	Yes	TMS	Deep Brook, East Branch headwater	KENT	Housatonic River	41.777969	-73.394330
18511	Yes	TMS	Deep Brook, West Branch headwater	KENT	Housatonic River	41.777521	-73.396950
17639	No	TMS	Kent Falls Brook	KENT	Kent Falls Brook	41.772603	-73.413187
15845	No	TMS	Macedonia Brook	KENT	Macedonia Brook	41.762600	-73.493600
18621	Yes	TMS	Pond Mountain Brook	KENT	Macedonia Brook	41.767439	-73.473600
14126	No	TNC	Aspetuck River	WESTPORT	Aspetuck River	41.186400	-73.342900
15375	No	TNC	Aspetuck River	WESTPORT	Aspetuck River	41.176900	-73.357900
15380	No	TNC	Aspetuck River	EASTON	Aspetuck River	41.228700	-73.324100

Site #	New?	Organization	Stream Name	Town	Watershed	Lat	Long
16259	No	TNC	Aspetuck River	FAIRFIELD	Aspetuck River	41.213200	-73.329100
16260	No	TNC	Aspetuck River	EASTON	Aspetuck River	41.258900	-73.324700
16261	No	TNC	Aspetuck River	EASTON	Aspetuck River	41.277100	-73.327500
18139	No	TNC	Aspetuck River, Tributary to	REDDING	Aspetuck River	41.289060	-73.324420
17379	No	TNC	Little River	REDDING	Little River	41.291900	-73.369200
14444	No	TNC	Saugatuck River	REDDING	Saugatuck River	41.294500	-73.394800
15370	No	TNC	Saugatuck River	WESTON	Saugatuck River	41.192700	-73.361700
16430	No	TNC	Saugatuck River	REDDING	Saugatuck River	41.299400	-73.401600
16064	No	TNC	Umpawaug Pond Brook	REDDING	Saugatuck River	41.316900	-73.444300
15364	No	TNC	West Branch Saugatuck River	WESTPORT	West Branch Saugatuck River	41.171800	-73.364300
15365	No	TNC	West Branch Saugatuck River	WESTON	West Branch Saugatuck River	41.208800	-73.388900
16264	No	TNC	West Branch Saugatuck River	WESTON	West Branch Saugatuck River	41.214000	-73.388900
17332	No	TNC	West Branch Saugatuck River	WESTON	West Branch Saugatuck River	41.233100	-73.393400
17335	No	TNC	West Redding Brook	DANBURY	Saugatuck River	41.334300	-73.442800
15312	No	TRCC	Beaver Brook	LYME	Beaver Brook	41.410000	-72.328900
18392	No	TRCC	East Branch Eightmile River	LYME	East Branch Eightmile River	41.428964	-72.336645
18518	Yes	TRCC	Eightmile River	EAST HADDAM	Eightmile River	41.473000	-72.339000
15313	No	TRCC	Harris Brook	SALEM	Harris Brook	41.473300	-72.285100
15316	No	VCC	Gages Brook	TOLLAND	Tankerhoosen River	41.857100	-72.424800
14469	No	VCC	Tankerhoosen River	VERNON	Tankerhoosen River	41.820100	-72.503300
14470	No	VCC	Tankerhoosen River	VERNON	Tankerhoosen River	41.827200	-72.464000
15205	No	VCC	Tankerhoosen River	VERNON	Tankerhoosen River	41.829400	-72.448200
15206	No	VCC	Tankerhoosen River	VERNON	Tankerhoosen River	41.823200	-72.493400
15138	No	WHS	Bantam River	LITCHFIELD	Bantam River	41.730500	-73.186800
14710	No	WMS	Shepaug River	WASHINGTON	Shepaug River	41.683397	-73.298268
15887	No	WMS	Shepaug River	WASHINGTON	Shepaug River	41.701900	-73.290400
14275	No	WA/TLGV	Little River	WOODSTOCK	Little River	41.928000	-71.933100

**The River Bioassessment by Volunteers (RBV) Program is a
volunteer water quality monitoring program
developed and coordinated by:**



**Connecticut Department of Energy &
Environmental Protection
Bureau of Water Protection and Land Reuse
Monitoring and Assessment Program**

To learn more about the RBV Program visit www.ct.gov/deep/rbv



Amanda Ryan and Matthew George, QRWA volunteers, use the RBV method to assess the water quality of Mixville Brook in Prospect.
Photo courtesy of the Quinnipiac River Watershed Association