

Rapid Bioassessment in Wadeable Streams & Rivers by Volunteer Monitors

Annual Summary Report # 12

2010



State of Connecticut
Department of Environmental Protection
Bureau of Water Protection & Land Reuse
Amey Marrella, Commissioner

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COVER: What lies beneath? The anticipation of finding different macroinvertebrates builds until the net is removed from the water and deposited into the sorting trays. Once the macroinvertebrates have been captured it is hard to keep your eyes and hands off.

Executive Summary

The Rapid Bioassessment in Wadeable Streams and Rivers by Volunteer Monitors program (RBV) is a macroinvertebrate collection protocol developed by the Connecticut Department of Environmental Protection, Bureau of Water Protection and Land Reuse, Ambient Monitoring Program (herein referred to as WPLR). The goal of RBV is to provide volunteer monitoring programs with a quick, efficient, and standardized methodology for the collection of macroinvertebrate community data from wadeable streams. This data can be used to screen for either very good or very poor water quality and augment monitoring conducted by WPLR. All support materials including a more detailed description of the program, the RBV methodology, data sheets, sorting guides, macroinvertebrate cards, informational brochure, and annual summary reports are available on the DEP volunteer monitoring web page (www.ct.gov/dep/rbv). To obtain additional information about RBV or to become involved, please contact Mike Beauchene, volunteer monitoring coordinator, by phone (860) 424-4185 or email mike.beauchene@ct.gov

**2010
PARTICIPATION
STATISTICS:**

Number of monitoring locations (Appendix A)	106
Number of samples collected	119
Number of waterbodies monitored	76
Number of fall samples > or = 4 "Most Wanted" types	18
Number of individual participants	400+
Number of groups participating in 2010	22
Number of groups participating for the first time	6
Number of groups returning for another year	16

WPLR would like to thank all of the participants who collected RBV data under the sponsorship of the following groups and individuals (underline is a hyperlink to a web page):

[Bolton Conservation Commission](#), [Connecticut Audubon Society at Pomfret Citizen Science Program](#), [Julie Blum](#), [Boy Scout Troop 925](#), [Earl Roberts](#), [East Lyme Conservation Commission](#), [Eightmile River Watershed Association](#), [Farmington River Watershed Association](#), [Friends of the Lake \(Lillononah\)](#), [Housatonic Valley Association](#) ([Roxbury Conservation Commission](#), [Shepaug River Association](#)), [Nature Conservancy-Devils Den](#), [The Nature Conservancy-Salmon River Watershed Coalition](#), [Pomperaug River Watershed Coalition](#), [Quinebaug/Shetucket Heritage Corridor](#) [The Last Green Valley Water Quality Monitoring Program](#), [Ridgefield Conservation Commission](#), [Three Rivers Community Technical College](#), [Trout Unlimited-Candlewood Valley Chapter](#), [Washington Montessori School](#), [Westover School](#), and [Woodstock Academy](#).

The RBV Program

The RBV program includes 33 macroinvertebrate taxa, each with distinct shape, structure, color, or behavior (Appendix B). In order for an organism to be included in the RBV program each must meet 3 criteria; first the organism should have a statewide distribution, second the organism should provide key information about the river system, and third the organism has a unique behavior or morphological characteristic easily observed by first time participants. Each of these organisms has been placed into 1 of 4 categories *most wanted* (panels 1-8b) consists of macroinvertebrates typically found in streams characterized by outstanding water quality. *Moderately wanted* (panels 9-14) are those found in a range of conditions from outstanding to good water quality. *Least wanted* (panels 15a-g) consists of those found in all types of water quality conditions, from outstanding to poor. *Others* (no panels have been developed) represent organisms that can be very common or are very familiar to participants but do not meet the 3 criteria listed above. The "other" category of organisms was added to the RBV program starting in 2005 based on suggestions from RBV participants. Detailed information about each organism can be found on the field identification panels. The panels are available on the DEP web page at ([RBV Macroinvertebrate Cards](#)). The name of each of the 3 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.

The RBV Method

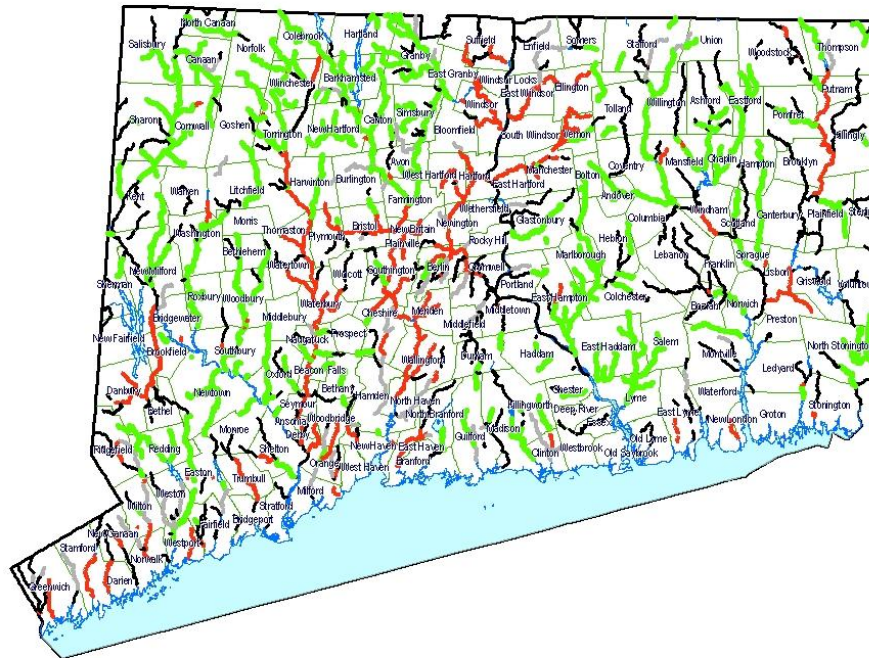
The RBV method is based upon the Rapid Bioassessment Protocols developed by the US EPA and implemented by DEP ambient monitoring staff (Barbour et al 1999, Plafkin et al 1989). The RBV method requires that the participants sample the macroinvertebrate community from a stream riffle habitat and produce a voucher collection accompanied by a data sheet (Appendix B). A voucher collection is produced by placing at least one specimen of each type of organism collected into a leak-proof container with a descriptive label and isopropyl alcohol. The data sheet documents the different organisms present at the site as well as the relative abundance of each in the sample. Both the voucher sample and the data sheet are submitted to WPLR. The contents of the vial are verified against the field data sheet and then entered into a Microsoft Access database. It is important to note that the final data for the sample is based upon the voucher collection and not what has been recorded on the data sheet. If an organism is listed on the data sheet but not present in the voucher collection, it does not count.



The RBV method occurs annually in the fall and takes approximately 2 hours to complete at the monitoring site. Prior to collecting the macroinvertebrates most participants attended a 3-hour training session in which the WPLR volunteer monitoring coordinator describes the program and introduces the participants to the RBV method. WPLR has 15 sets of equipment available for short-term loan to participants. Those groups that have participated for at least 2 years and feel confident with the methodology may opt to forgo the official WPLR training session and simply borrow the equipment.



Biological data use: The primary use of macroinvertebrate data by WPLR is to compare the community structure to narrative biological criteria described in the current [Water Quality Standards](#). This comparison can provide an assessment of the degree of impairment and therefore the degree to which water quality standards are supported. Data for each segment assessed can be found in the [Integrated Water Quality Report to Congress](#). The figure below represents the aquatic life use support assessments reported in the 2010 integrated report. Green lines represent stream segments supporting aquatic life goals while red segments are the converse, not supporting aquatic life goals.



Data collected according to the RBV method can be used as a screening tool to identify stream sections with either very high or very low water quality. The documentation (voucher collection) of key indicator organisms (the most wanted) in a section of a stream provides a record of the benthic community present for a collection date and time. However, the absence of such indicators in any sample does not automatically mean the water quality is low, but rather further information may be required. In some situations current WPLR method may be necessary to definitively assess water quality. It is important to note that the "least wanted" are able to thrive in many environmental conditions while the "most wanted" thrive only under conditions of low environmental stress. Therefore the most definitive RBV data are the collections with good representation of organisms in the "most wanted" category.

For those samples with 4 or more types of organisms in the "most wanted" category WPLR's monitoring staff is confident the location fully supports the [State Water Quality Standard](#) for aquatic life. Samples with 3 or fewer types in the "most wanted" category do not definitively indicate impairment or water quality degradation. In these situations additional review is conducted by WPLR to determine the particular species present, land use characteristics upstream of the monitoring location, and the potential for sampling/methodology errors.

RBV limitations

The RBV method was developed to be a simple, non-technical, and educational method for use by citizens interested in evaluating the water quality of a local resource while concurrently generating useful information for WPLR. To date the program has been successful at meeting both objectives. However, to accomplish these, the RBV method requires the participant preserve at least one of each different type of organism present. The final list of organisms in a sample is based on WPLR review of the datasheet against the organisms present in the voucher collection. If the organism is not in the voucher but recorded on the datasheet, it is not counted as part of the sample, even if the organism was actually present. Successful implementation of the RBV method is dependent upon an adequate collection of a sample from a riffle habitat, sorting organisms to find all of the different types present, and most importantly placing 1 of each into a leak-proof container with alcohol and a label. It is not dependent upon accurate identification by the participant. Any variable (site selection, incomplete collection, high stream flow, inclement weather conditions, nuisance insects, rushed time constraints, or rotted/desiccated voucher specimens) that reduces the quality or completeness of any step in the RBV method may ultimately reduce the number of different types found. As a result, errors made will tend to underestimate the macroinvertebrate community present and may overestimate water quality degradation. To insure that each organism present at a site is documented, it is critical that at least one of each different type of organism is placed in the voucher collection. In most situations sampling by WPLR using the current WPLR protocol will be necessary to definitively assess water quality.

TO BECOME INVOLVED

A daylong training/data collection workshop can be held for your organization free of charge*. The workshop is structured around instructional power-point presentations in the morning and data collection in the afternoon.

The data collection process is completed on site at a riffle (fast flowing rocky bottom). Participants wade into the water, dislodge the organisms into a net by scrubbing the rocks, sort and identify the different organisms present, and preserve a representative set of organisms for verification. At the completion of the session the data is submitted to the CT DEP for incorporation into water quality assessments.

RBV workshops are scheduled on a first come first serve basis with priority for first time programs. Since the data collection occurs in the fall and there are a fixed number of weekend days, it is better to schedule well in advance. Every attempt will be made to accommodate each workshop request. WPLR will provide all of the necessary equipment **except for waders, hip boots or other waterproof foot ware.**

TO BECOME INVOLVED*:

The prerequisites to sponsor a workshop are to:

- 1.) Assemble a group of at least 6 adults
- 2.) Reserve a meeting room centrally located to the potential monitoring stations. The room must have electricity and be capable of holding all of the participants.
- 3.) Contact Mike Beauchene to schedule a workshop date by phone (860) 424-4185 or email at mike.beauchene@ct.gov

*Individuals not associated with a monitoring program can be linked with a program in their local area.



2010 RBV Summary:

2010 marked the 12th year citizen groups collected and submitted samples to WPLR under the RBV program. Approximately 400 participants collected 119 (105 fall and 14 spring) samples (Figure 1).

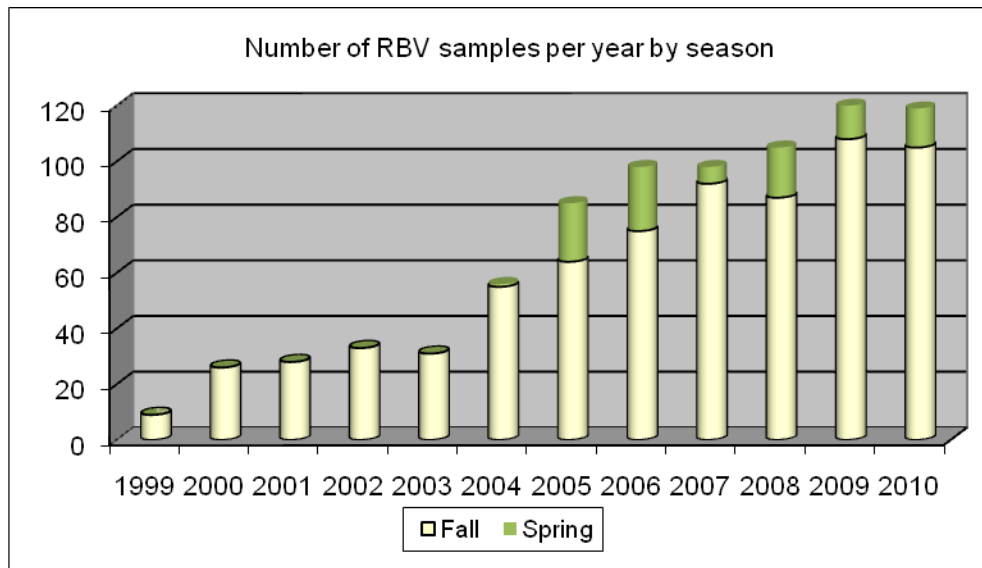


Figure 1. The number of RBV samples collected and submitted to WPLR by RBV participants. The number of fall samples has grown 5 fold since the program inception. Additionally, since 2005, some groups began sampling sites in spring as well. While the spring data is not used for an official DEP assessment, it can provide useful information for the program collecting the information.

Locations: Twenty-two citizen groups collected 119 samples from 106 locations on 76 different waterbodies during 2010 (Figure 2). A description of each sample location is provided in Appendix A.

Table 1 is a list of each RBV organism present in each of the voucher collections submitted to DEP for 2010. The entries in the table are sorted alphabetically by stream name and basin number and then by greatest number of "most wanted" types to least. Each row is a sample as described by the stream name, collection date, basin id and site number. The number at the top of each column in the table corresponds to the panel number on the RBV datasheet and RBV identification materials. Panels 1-8b are in the most wanted category, 9-14 in the moderately wanted category, and panel 15a-15g are in the least wanted category.

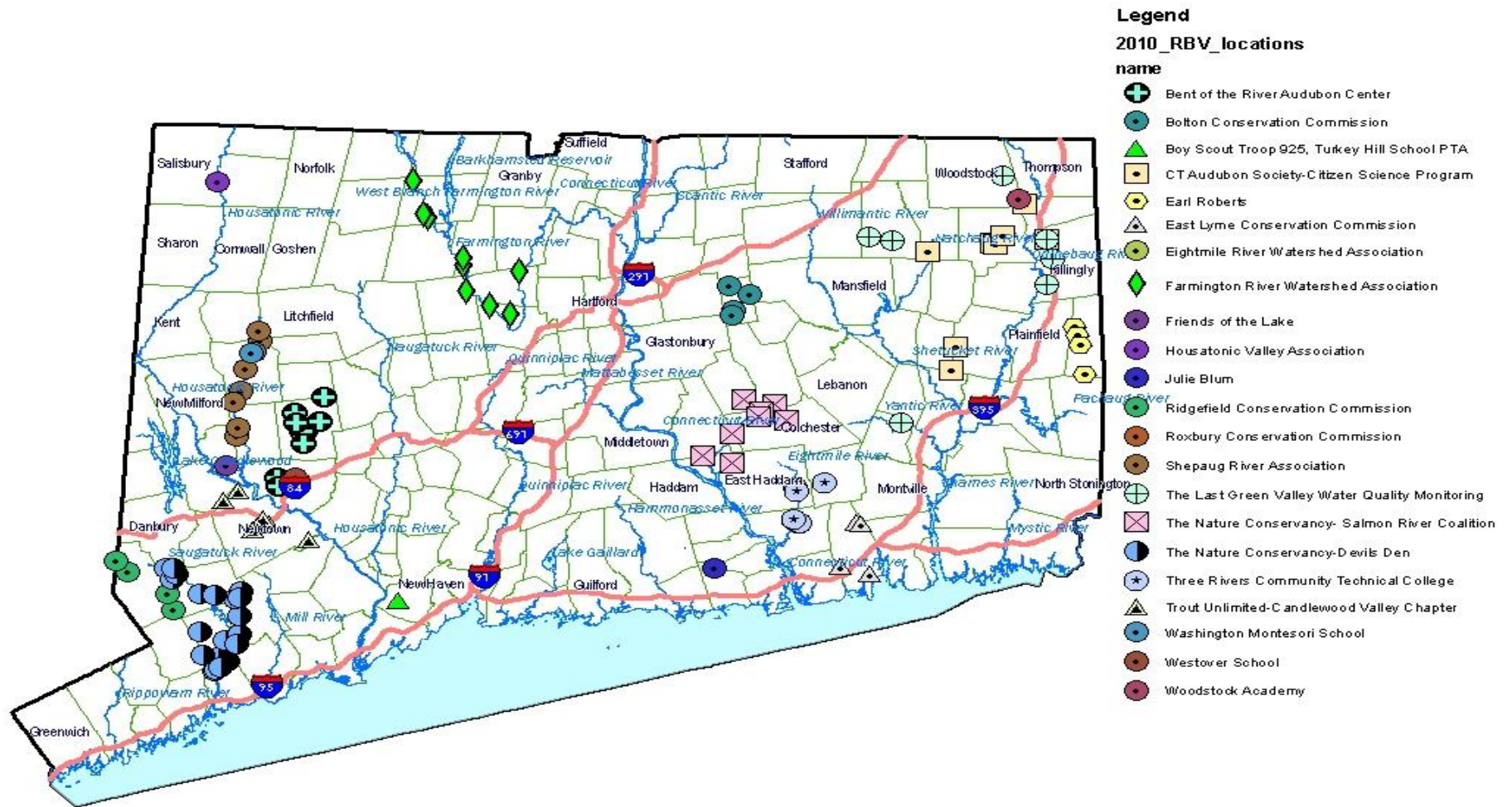


Figure 2. The 106 sample collection locations during 2010 and the entity responsible for each collection. A description of each of the locations can be found in Appendix A.

Table 1. The organisms present in each of the 119 voucher collections submitted to WPLR during 2010. The samples are sorted alphabetically by stream name and basin number and then descending by the greatest number of most wanted types present in a voucher. The panel number corresponds to the RBV datasheet, identification cards, and sorting guide. Of the 119 samples collected, only those with 4 or more total most wanted from a fall sample date (Blue background) are used to indicate full support of aquatic life use goals.

Stream	Station id	date	town	most wanted								moderately wanted							least wanted					total							
				1	2	3	4	5A	5B	5C	6A	6B	7	8A	8B	total	9	10	11	12	13A	13B	14		total	15A	15B	15C	15D	15E	15F
Aspetuck River	1	10/16/10	Westport		X			X						2	X	X	X	X	X	X	X	7		X						X	2
Aspetuck River	1299	10/16/10	Westport		X									1	X	X	X		X		X	5								X	1
Aspetuck River	1304	10/16/10	Easton		X			X						2	X	X	X			X	X	5									
Aspetuck River	2479	10/16/10	Fairfield		X			X						2	X	X	X	X	X	X	X	7								X	1
Aspetuck River	2480	10/17/10	Easton		X			X						3		X	X			X	X	3									
Aspetuck River	2482	10/17/10	Easton					X						2		X	X	X		X	X	5									
Aspetuck River, Tributary to (LYONS SWAMP OUTFLOW)	5380	10/17/10	Redding					X						1		X				X	X	3			X						1
Aspetuck River, Tributary to (LYONS SWAMP OUTFLOW)	6209	10/17/10	Redding					X						1	X	X				X	X	4									
Beaver Brook	1236	4/24/10	Lyme	X				X						3						X	X	2				X					1
Beaver Brook	1236	10/23/10	Lyme					X						2	X	X	X			X	X	5				X		X	X		3
Blackledge River	12	9/25/10	Marlborough				X	X						2	X	X		X	X		X	5									
Blackledge River	1248	11/7/10	Bolton					X						1	X					X		2							X		1
Bolton Pond Brook	2486	11/7/10	Bolton							X				1															X		1
Bunnell Brook	2266	10/16/10	Burlington					X			X	X		4	X	X	X			X	X	5				X			X		2
Burnhams Brook	1239	4/24/10	East Haddam		X	X		X		X				5				X			X	2									
Cedar Swamp Brook	6241	9/23/10	Sterling				X	X						2	X	X	X				X	5									
Cherry Brook	1513	10/9/10	Canton		X			X			X			3	X	X		X		X		4									

Little River	1655	10/9/10	Canterbury		×		×		×	×			4	×	×	×		×		4					×	×	2	
Little River	2795	9/11/10	Canterbury		×		×	×					3	×	×		×	×	×	5								
Little River	5990	10/17/10	Redding		×								1	×	×	×		×		4					×		1	
Mashamoquet Brook	1164	9/24/10	Pomfret			×	×				×	×	4				×		×	2								
Mashamoquet Brook	1541	9/24/10	Pomfret		×		×		×			×	4	×		×	×	×		4								
Meadow Brook	6208	9/25/10	Colchester				×						1	×				×		2					×		1	
Moodus River	6207	9/25/10	East Haddam				×				×		2	×		×			×	3	×			×	×	×	4	
Moosup River	6240	9/15/10	Sterling		×		×						2	×	×	×	×	×		6								
Mopus Brook	6231	11/6/10	Ridgefield		×		×		×				3	×	×	×	×		×	5								
Morgan Brook	1495	10/9/10	Barkhamsted		×		×	×					3			×	×	×	×	4								
Morgan Brook	2273	10/9/10	Barkhamsted		×		×	×	×				4	×	×		×			3								
Mount Hope River	2791	9/11/10	Ashford		×		×		×				3		×	×	×	×	×	6								
Muddy Brook	1830	9/18/10	Woodstock				×						1	×		×			×	3					×		1	
Natchaug River	1319	9/10/10	Eastford		×		×		×				3	×		×	×		×	4				×			1	
Nod Brook	1243	9/25/10	Avon						×		×		2	×	×	×	×		×	5								
Nonewaug River	230	9/25/10	Woodbury		×		×						2	×	×	×	×		×	6								
Nonewaug River	770	9/25/10	Woodbury				×						1	×	×	×	×	×		5				×			1	
Norwalk River	6232	11/6/10	Ridgefield		×		×		×				3	×	×	×			×	4	×	×					2	
Patagansett River	615	9/18/10	East Lyme											×	×	×	×		×	5	×						1	
Pine Brook	2247	9/25/10	East Hampton				×				×		2	×	×	×		×	×	5					×		1	
Pine Brook	2779	9/25/10	Colchester				×						1	×	×			×		3					×		1	
Pomperaug River	934	9/25/10	Southbury											×	×	×	×			4	×				×		2	
Pomperaug River	1313	9/25/10	Southbury				×		×		×		3	×	×		×			3	×						1	
Pomperaug River	1990	9/25/10	Woodbury				×						1		×		×	×	×	4			×	×		×	3	
Pomperaug River	5936	9/25/10	Southbury								×		1	×	×		×			3								
Pond Brook	1523	10/9/10	Newtown		×		×				×		3			×	×	×		3								
Pond Brook	2766	10/9/10	Newtown		×		×		×				3	×	×	×	×	×		5		×			×		2	
Pootatuck River	281	10/9/10	Newtown		×		×	×			×		4	×		×	×	×		4	×					×		2

“4 or MORE”

WPLR use of the RBV data for aquatic life use support assessments = "4 or more types of the most wanted category":

The distribution of most wanted types in the 119 samples was 0 to 6 for spring 2010 and 0 to 5 for fall 2010 (Table 1 and Figure 3). Sixteen of the fall 2010 voucher samples had 4 or more types in the most wanted category and were considered to be in full support of aquatic life goals (Table 2) while 22 voucher samples just missed the “4” criteria by a single most wanted type (Table 3).

Table 2. Sixteen of the 2010 RBV voucher samples contained 4 or more “Most Wanted” types. The data are sorted alphabetically by stream name.

Stream	305b segment	DEP station id	Collection date	landmark	Municipality	Most Wanted Types
Bunnell Brook	CT4311-00_01	2266	10/16/2010	Punch Brook confluence and Route 179	Burlington	4
Cranberry Meadow Brook	TBD	5153	9/18/2010	50 M DS of rte 161	East Lyme	5
Farmington River	CT4300-00_04	741	9/25/2010	Steele bridge on Town Bridge Road	Canton	4
Harris Brook	CT4801-00_01	1237	10/23/2010	Mouth	Salem	4
Jeremy River	CT4705-00_02	2370	9/25/2010	behind RT 2 - exit 16 (RT 149)Commuter Parking Lot	Colchester	5
Little River	CT3805-00_04	1655	10/9/2010	between bridge crossing and Goodwin Road	Canterbury	4
Mashamoquet Brook	CT3710-00_02	1164	9/24/2010	Route 44 in State Park	Pomfret	4
Mashamoquet Brook	CT3710-00_02	1541	9/24/2010	paved section of road in state park	Pomfret	4
Morgan Brook	CT4305-00_02	2273	10/9/2010	Route 318	Barkhamsted	4
Pootatuck River	CT6020-00_02	281	10/9/2010	Wasserman Way on Game Club Property (Mile Hill Rd)	Newtown	4
Salmon River	CT4700-00_01	315	9/25/2010	Route16 Bridge	East Hampton	5
Shepaug River	CT6700-00_01	2474	10/16/2010	adjacent to Bee Brook Confluence	Washington	5
Shepaug River	CT6700-00_01	6024	10/22/2010	below Bantam river Confluence	Washington	5
Shepaug River	CT6700-00_01	1037	10/23/2010	Steep Rock park at river road bridge, tunnel	Washington	5

				road, or lower church hill		
Shepaug River	CT6700-00_01	6023	10/23/2010	1.11 miles US of Judds Bridge Rd at Steep Rock Preserve	Washington	5
Shepaug River	CT6700-00_02	596	10/21/2010	Whittlesey Road	Washington	4
Shepaug River	CT6700-00_01	325	10/23/2010	Wellers Bridge Road (Route 67)	Roxbury	4
Titicus River	CT8104-00_01	628	11/6/2010	Sherwood Road	Ridgefield	4

Table 3. Twenty-two of the 2010 RBV voucher samples contained 3 “Most Wanted” types. Data are sorted by stream name.

Stream	305b segment	DEP station id	Collection date	landmark	Municipality	Most Wanted Types
Aspetuck River	CT7202-00_02	2480	10/17/2010	Silver Hill Road	Easton	3
Cherry Brook	CT4309-00_01	1513	10/9/2010	Route 44	Canton	3
Deep Brook	CT6019-00_01	2473	10/9/2010	Bushy Hill Road in Dickenson park	Newtown	3
Eightmile River	CT4800-00_01	1092	10/23/2010	Deep Hole Picnic Area	East Haddam	3
Fivemile River	CT3400-00_03	2462	11/3/2010	Route 12 and Huntley Road on town property	Killingly	3
Judd Brook	CT4702-00_01	954	9/25/2010	old road crossing	Colchester	3
Latimer Brook	CT2202-00_02	5935	9/18/2010	St Mathias Church	East Lyme	3
Little River	CT3805-00_04	2795	9/11/2010	off Little River lane	Canterbury	3
Little River	CT3708-00_01	1063	10/29/2010	Murphy Park (town swimming area)	Putnam	3
Mopus Brook	TBD	6231	11/6/2010	off Spring Valley road	Ridgefield	3
Morgan Brook	CT4305-00_01	1495	10/9/2010	Morgan Brook Road	Barkhamsted	3
Mount Hope River	CT3206-00_02	2791	9/11/2010	Route 44	Ashford	3
Natchaug River	CT3200-00_02	1319	9/10/2010	Route 198 entrance to Natchaug SF	Eastford	3
Norwalk River	CT7300-00_05	6232	11/6/2010	Downstream Cains Hill road and Topstone Roads	Ridgefield	3
Pomperaug River	CT6800-00_01	1313	9/25/2010	off Flagg Swamp Road	Southbury	3

Pond Brook	CT6018-00_01	1523	10/9/2010	Bridge at State Boat Launch	Newtown	3
Pond Brook	TBD	2766	10/9/2010	Intersection of Pond Brook Rd and Obtuse Rd	Newtown	3
Sandy Brook	CT4304-00_01a	1796	10/9/2010	Route 20	Barkhamsted	3
Shepaug River	CT6700-00_01	5599	10/23/2010	At Hodge Park	Roxbury	3
Transylvania Brook	CT6806-00_01	597	9/25/2010	Whale Road	Southbury	3
Wappoquia Brook	CT3709-00_01	1790	10/16/2010	CT Audubon Center at Pomfret	Pomfret	3
Yantic River	CT390000_01	6238	9/21/2010	in Yantic River Park	Bozrah	3

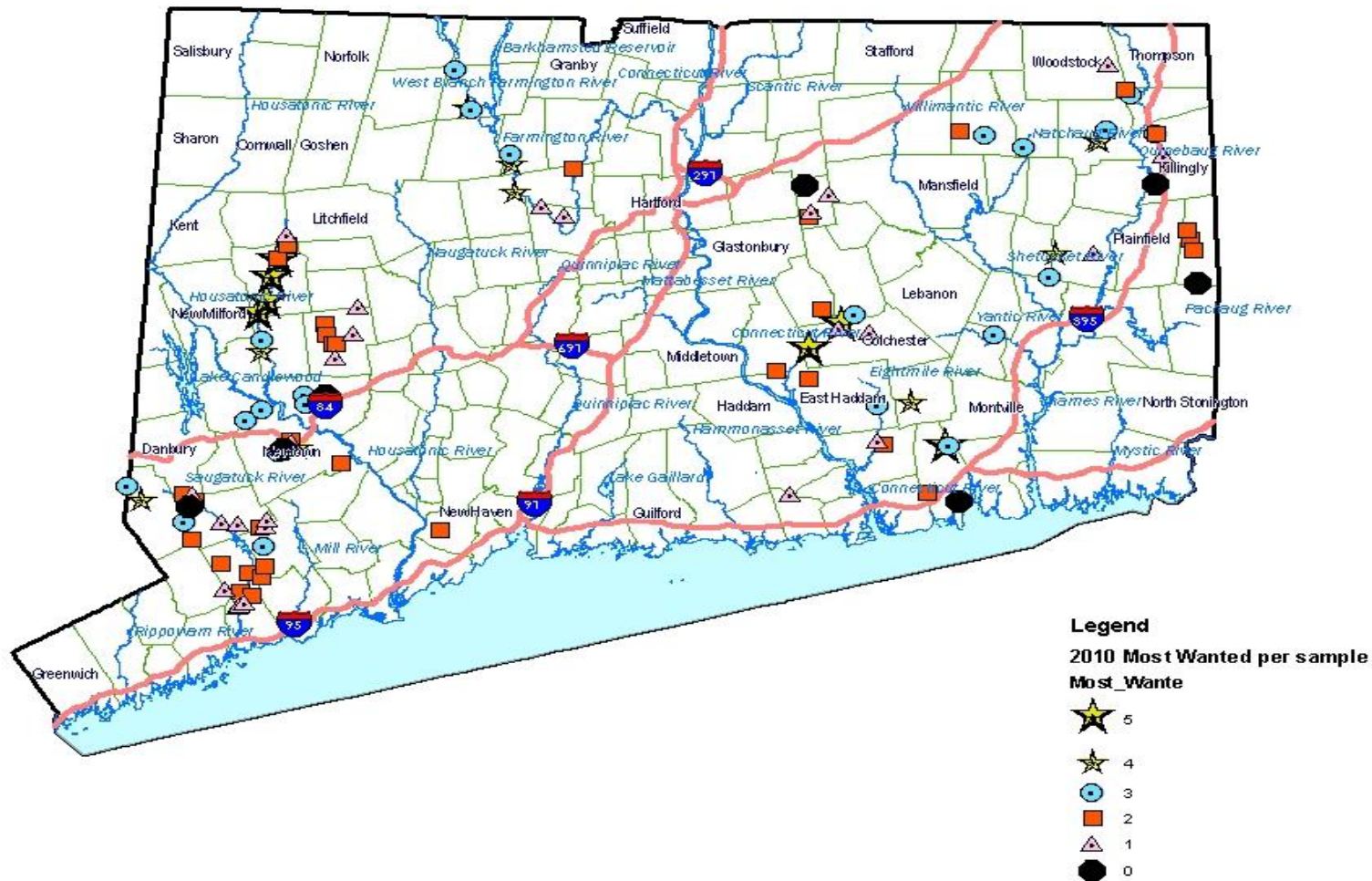


Figure 3. The number of most wanted types present in voucher samples submitted to WPLR collected in fall 2010. Fall samples with 4 or more indicate full support of aquatic life support goals.

References:

Barbour, M.T., J. Gerritsen, B.D. Synder, and J.B. Stribling. 1999. Rapid Bioassessment in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish. Second Edition. EPA 841-B-99-002. U.S. Environmental Protection Agency; Office of Water; Washington, D.C.

<http://www.epa.gov/owow/monitoring/rbp/>

Plafkin, J.L., M.T. Barbour, K.D. Porter, S.K. Gross, and R.M. Hughes. 1989. *Rapid Bioassessment Protocols for use in Streams and Rivers: Benthic Macroinvertebrates and Fish*. EPA/444/4-89-00. <http://www.epa.gov/owow/monitoring/rbp/>

Additional links with relevant information

USEPA volunteer monitoring: <http://www.epa.gov/OWOW/monitoring/vol.html>

USEPA biological monitoring: <http://www.epa.gov/bioindicators/html/invertebrate.html>

USGS water resources data for Connecticut: <http://ct.water.usgs.gov/>

CT DEP Integrated Report to Congress:

http://www.ct.gov/dep/cwp/view.asp?a=2719&q=325610&depNav_GID=1654

CT DEP Water Quality Standards:

http://www.ct.gov/dep/cwp/view.asp?a=2719&q=325618&depNav_GID=1654

CT DEP RBV web page:

http://www.ct.gov/dep/cwp/view.asp?a=2719&q=325606&depNav_GID=1654

Appendix A. The following provides a description of the location where an RBV sample was collected during 2010. Locations are sorted alphabetically by stream name.

name	Stream	DEP station id	proximity	landmark	Municipality	305b segment	YLat	XLong
The Nature Conservancy-Devils Den	Aspetuck River	1	upstream	Bayberry Lane	Westport	CT7202-00_01	41.1864	-73.3429
The Nature Conservancy-Devils Den	Aspetuck River	1299	Upstream	Confluence with Saugatuck River at Lyons Plain Rd	Westport	CT7202-00_01	41.1769	-73.3579
The Nature Conservancy-Devils Den	Aspetuck River	1304	at	Wells Hill Road	Easton	CT7202-00_01	41.2287	-73.3241
The Nature Conservancy-Devils Den	Aspetuck River	2479	at	Judges Hollow Road	Fairfield	CT7202-00_01	41.2132	-73.3291
The Nature Conservancy-Devils Den	Aspetuck River	2480	at	Silver Hill Road	Easton	CT7202-00_02	41.2589	-73.3247
The Nature Conservancy-Devils Den	Aspetuck River	2482	upstream	Rock House Road at nature preserve	Easton	CT7202-00_02	41.2865	-73.3327
The Nature Conservancy-Devils Den	Aspetuck River, Tributary to (LYONS SWAMP OUTFLOW)	5380		US Sport Hill Rd	Redding	TBD	41.2978	-73.3206
The Nature Conservancy-Devils Den	Aspetuck River, Tributary to (Lyons Swamp outflow)	6209	DS	Rockhouse Road just past Ledgeway road	Redding	TBD	41.2891	-73.3244
Three Rivers Community Technical College	Beaver Brook	1236	Downstream	bridge at 55-123 Beaver Brook Road	Lyme	CT4803-00_01	41.4100	-72.3289
Eightmile River Watershed Association	Beaver Brook	1236	Downstream	bridge at 55-123 Beaver Brook Road	Lyme	CT4803-00_01	41.4100	-72.3289
The Nature Conservancy-	Blackledge River	12	upstream	Confluence with Lyman	Marlborough	CT4707-00_01	41.6084	-72.4263

Salmon River Coalition				Brook				
Bolton Conservation Commission	Blackledge River	1248	500 DS Downstream	Deming Road	Bolton	CT4707-00_01	41.7518	-72.4454
Bolton Conservation Commission	Bolton Pond Brook	2486	at	Mark Anthony Lane	Bolton	TBD	41.7784	-72.4167
Farmington River Watershed Association	Bunnell Brook	2266	between	Punch Brook confluence and Route 179	Burlington	CT4311-00_01	41.7833	-72.9247
Three Rivers Community Technical College	Burnhams Brook	1239	at	Mouth	East Haddam	CT4800-08_01	41.4603	-72.3343
Earl Roberts	Cedar Swamp Brook	6241	at	Route 14a	Sterling	TBD	41.6922	-71.8253
Farmington River Watershed Association	Cherry Brook	1513	upstream	Route 44	Canton	CT4309-00_01	41.8365	-72.9295
Ridgefield Conservation Commission	Cooper Pond Brook	32	downstream	plaza entrance bridge	Ridgefield	CT7300-07_01	41.2677	-73.4422
East Lyme Conservation Commission	Cranberry Meadow Brook	5153		50 M DS of rte 161	East Lyme	TBD	41.4081	-72.2289
Trout Unlimited-Candlewood Valley Chapter	Deep Brook	47	upstream mouth	near Pootatuck River	Newtown	CT6019-00_01	41.4131	-73.2823
Trout Unlimited-Candlewood Valley Chapter	Deep Brook	1993	DS	old bridge crossing DS Wassermann way	Newtown	CT6019-00_01	41.4023	-73.2947
Trout Unlimited-Candlewood Valley Chapter	Deep Brook	2473	upstream	Bushy Hill Road in Dickenson park	Newtown	CT6019-00_01	41.3976	-73.3006
Bent of the River Audubon Center	East Spring Brook	5932	at	Nonewaug Road and Porter Hill road	Bethlehem	TBD	41.6121	-73.1761
Eightmile River Watershed Association	Eightmile River	1092	at	Deep Hole Picnic Area	East Haddam	CT4800-00_01	41.4671	-72.3372
Eightmile River	Eightmile River,	1238	at	trail crossing off Macintosh	Lyme	CT4800-15_01	41.4155	-72.3396

Watershed Association	tributary to (PV brook)			Road				
Three Rivers Community Technical College	Eightmile River, tributary to (PV brook)	1238	at	trail crossing off Macintosh Road	Lyme	CT4800-15_01	41.4155	-72.3396
The Last Green Valley Water Quality Monitoring	Fall Brook (Ross Pond Brook)	6236	at Rte 12		Killingly	TBD	41.7899	-71.8847
Julie Blum	Falls River	380	downstream 500 m	Messerschmidt Pond	Deep River	CT4019-00_01	41.3372	-72.4808
Farmington River Watershed Association	FARMINGTON RIVER	741	100 meters upstream	Steele bridge on Town Bridge Road	Canton	CT4300-00_04	41.8257	-72.9295
The Last Green Valley Water Quality Monitoring	Fivemile River	2462	at	Route 12 and Huntley Road on town property	Killingly	CT3400-00_03	41.8638	-71.8834
CT Audubon Society-Citizen Science Program	Fivemile River	2462	at	Route 12 and Huntley Road on town property	Killingly	CT3400-00_03	41.8638	-71.8834
East Lyme Conservation Commission	Fourmile River	5933	at	spring rock road	East Lyme	TBD	41.3390	-72.2592
Bolton Conservation Commission	French Brook	1534	at	French Road	Bolton	CT4707-02_01	41.7442	-72.4485
Trout Unlimited-Candlewood Valley Chapter	Halfway River	2762	at	Jordan Hill Road	Newtown	CT6022-00_01	41.3811	-73.2010
Three Rivers Community Technical College	Harris Brook	1237	at	Mouth	Salem	CT4801-00_01	41.4733	-72.2851
Three Rivers Community Technical College	Harris Brook	1237	at	Mouth	Salem	CT4801-00_01	41.4733	-72.2851
Housatonic Valley Association	HOUSATONIC RIVER	1772	at Dugway Road below power plant	HOUSATONIC RIVER AT FALLS VILLAGE	Canaan	CT6000-00_06	41.9572	-73.3697

The Nature Conservancy-Salmon River Coalition	Jeremy River	2370	approximately 150 feet downstream of parking lot area	behind RT 2 - exit 16 (RT 149)Commuter Parking Lot	Colchester	CT4705-00_02	41.5894	-72.3948
The Nature Conservancy-Salmon River Coalition	Judd Brook	954	upstream	old road crossing	Colchester	CT4702-00_01	41.6005	-72.3730
CT Audubon Society-Citizen Science Program	Kitt Brook	6235	at 31 Tracy Road	Brenda Byers property	Canterbury	TBD	41.6896	-79.9880
The Last Green Valley Water Quality Monitoring	Knowlton Brook	6237	200 feet upstream	Route 74	Willington	TBD	41.8689	-72.2029
East Lyme Conservation Commission	Latimer Brook	5935	behind	St Mathias Church	East Lyme	CT2202-00_02	41.4073	-72.2217
Woodstock Academy	Little River	150	upstream	Peake Brook Road	Woodstock	CT3708-00_01	41.9280	-71.9331
CT Audubon Society-Citizen Science Program	Little River	1063	50 m US dam	Murphy Park (town swimming area)	Putnam	CT3708-00_01	41.9208	-71.9228
CT Audubon Society-Citizen Science Program	Little River	1655	adjacent Ulasick Road	between bridge crossing and Goodwin Road	Canterbury	CT3805-00_04	41.6916	-72.0489
CT Audubon Society-Citizen Science Program	Little River	2795	at old bridge fishing access	off Little River lane	Canterbury	CT3805-00_04	41.6547	-72.0569
The Nature Conservancy-Devils Den	Little River	5990		In front of Greenbush Rd. bridge	Redding	CT7201-00_01	41.2919	-73.3692
CT Audubon Society-Citizen Science Program	Mashamoquet Brook	1164	500 meters DS	Route 44 in State Park	Pomfret	CT3710-00_02	41.8579	-71.9812
CT Audubon Society-Citizen Science Program	Mashamoquet Brook	1541	end	paved section of road in state park	Pomfret	CT3710-00_02	41.8561	-71.9758
The Nature Conservancy-Salmon River Coalition	Meadow Brook	6208	behind condos	at end of Lindwood Cemetery road	Colchester	CT4703-00_01	41.5755	-72.3518
The Nature Conservancy-Salmon River Coalition	Moodus River	6207	at end of Redmill lane	near North Moodus road, upstream large stone culvert	East Haddam	TBD	41.5055	-72.4484

Earl Roberts	Moosup River	6240	upstream	junction of north main and sterling road	sterling	CT3500-00_03	41.7074	-71.8295
Ridgefield Conservation Commission	Mopus Brook	6231	behind Lodewick Property	off Spring Valley road	Ridgefield	TBD	41.3462	-73.5451
Farmington River Watershed Association	Morgan Brook	1495	downstream	Morgan Brook Road	Barkhamsted	CT4305-00_01	41.9023	-72.9933
Farmington River Watershed Association	Morgan Brook	2273	upstream	Route 318	Barkhamsted	CT4305-00_02	41.9086	-73.0007
The Last Green Valley Water Quality Monitoring	Mount Hope River	2791	250 feet downstream	Route 44	Ashford	CT3206-00_02	41.8633	-72.1612
The Last Green Valley Water Quality Monitoring	Muddy Brook	1830	upstream	child hill road/Roseland park rd/Paine district rd	Woodstock	CT3708-01_01	41.9665	-71.9619
CT Audubon Society-Citizen Science Program	Natchaug River	1319	at	Route 198 entrance to Natchaug SF	Eastford	CT3200-00_02	41.8458	-72.0976
Farmington River Watershed Association	Nod Brook	1243	DS	Route 10	Avon	CT4317-00_01	41.8158	-72.8294
Bent of the River Audubon Center	Nonewaug River	230	downstream	Route 47 (Washington Road)	Woodbury	CT6802-00_01	41.5575	-73.2122
Bent of the River Audubon Center	Nonewaug River	770	upstream	Minortown road adjacent to Mill Road	Woodbury	CT6802-00_01	41.5728	-73.1844
Ridgefield Conservation Commission	Norwalk River	6232	upstream	Route 7 crossing	Ridgefield	CT7300-00_05	41.2930	-73.4513
East Lyme Conservation Commission	Patagansett River	615	at	Brook Lane	East Lyme	CT2205-00_01	41.3262	-72.2054
The Nature Conservancy-Salmon River Coalition	Pine Brook	2247	upstream	Route 151 DS Sexton Hill Road	East Hampton	CT4709-00_01	41.5183	-72.5001
The Nature Conservancy-Salmon River Coalition	Pine Brook	2779	at mouth	Colchester Fish and Game club property	Colchester	CT4704-00_01	41.5802	-72.4005

Westover School	Pomperaug River	934	upstream	Poverty Road	Southbury	CT6800-00_03	41.4812	-73.2252
Bent of the River Audubon Center	Pomperaug River	1313	adjacent Bent-Of-River Audubon Center	off Flagg Swamp Road	Southbury	CT6800-00_01	41.4672	-73.2580
Bent of the River Audubon Center	Pomperaug River	1990	at	town park (the Hollow) off Rte 317	Woodbury	CT6800-00_04	41.5365	-73.2136
Bent of the River Audubon Center	Pomperaug River	5936	at	Flood Bridge Road	Southbury	CT6800-00_02	41.4690	-73.2298
Trout Unlimited-Candlewood Valley Chapter	Pond Brook	1523	at	Bridge at State Boat Launch	Newtown	CT6018-00_01	41.4597	-73.3275
Trout Unlimited-Candlewood Valley Chapter	Pond Brook	2766	300 meters downstream	Intersection of Pond Brook Rd and Obtuse Rd	Newtown	TBD	41.4433	-73.3545
Trout Unlimited-Candlewood Valley Chapter	Pootatuck River	281	downstream	Wasserman Way on Game Club Property (Mile Hill Rd)	Newtown	CT6020-00_02	41.4064	-73.2720
Trout Unlimited-Candlewood Valley Chapter	Pootatuck River	1198	adjacent	Tom's Brook Confluence (DS STP outfall)	Newtown	CT6020-00_01	41.4149	-73.2827
Farmington River Watershed Association	Poplar Swamp Brook	5937	at Trout Pond outlet	Winding Trails	Farmington	TBD	41.7465	-72.8446
Earl Roberts	Quanduck Brook	473	downstream	River Road	Sterling	CT3501-00_01	41.7214	-71.8347
Bolton Conservation Commission	Railroad Brook	6230	at RR trail crossing	In Freja Park DS Bolton Notch Pond	Bolton	TBD	41.7922	-72.4530
Farmington River Watershed Association	Roaring Brook	1081	upstream footbridge	Lions pool 300 meters US Cottage St.	Farmington	CT4312-00_01	41.7594	-72.8808
The Nature Conservancy-Salmon River Coalition	Salmon River	315	downstream	Route16 Bridge	East Hampton	CT4700-00_01	41.5526	-72.4496

Farmington River Watershed Association	Sandy Brook	1796	upstream	Route 20	Barkhamsted	CT4304-00_01a	41.9600	-73.0200
The Nature Conservancy-Devils Den	Saugatuck River	319	downstream	Route 107 & Route 53 Junction	Redding	CT7200-00_03	41.2945	-73.3948
The Nature Conservancy-Devils Den	Saugatuck River	320	at	DS end of Fly Fishing Only Area (1 Ford Rd)	Westport	CT7200-00_01	41.1693	-73.3670
The Nature Conservancy-Devils Den	Saugatuck River	1157	at	East Starrs Plain Road	Danbury	CT7200-00_04	41.3347	-73.4549
The Nature Conservancy-Devils Den	Saugatuck River	1294	at	Keene Park Parking Lot	Weston	CT7200-00_02	41.1927	-73.3617
The Nature Conservancy-Devils Den	Saugatuck River	1296	at	Lyons Plain Road at Fire Station	Weston	CT7200-00_02	41.2199	-73.3499
The Nature Conservancy-Devils Den	Saugatuck River	5245	upstream RR crossing	upstream Sympaug Turnpike	Redding	CT7200-00_04	41.3247	-73.4355
Housatonic Valley Association	Shepaug River	325	downstream 100 meters	Wellers Bridge Road (Route 67)	Roxbury	CT6700-00_01	41.5489	-73.3308
Shepaug River Association	Shepaug River	325	downstream 100 meters	Wellers Bridge Road (Route 67)	Roxbury	CT6700-00_01	41.5489	-73.3308
Washington Montessori School	Shepaug River	596	Upstream	Whittlesey Road	Washington	CT6700-00_02	41.6836	-73.3019
Washington Montessori School	Shepaug River	596	Upstream	Whittlesey Road	Washington	CT6700-00_02	41.6836	-73.3019
Shepaug River Association	Shepaug River	1037	in	Steep Rock park at river road bridge, tunnel road, or lower church hill	Washington	CT6700-00_01	41.6220	-73.3255
Shepaug River Association	Shepaug River	1037	in	Steep Rock park at river road bridge, tunnel road, or lower church hill	Washington	CT6700-00_01	41.6220	-73.3255

Shepaug River Association	Shepaug River	1839	500 meters Downstream	Rte 202 adjacent to dirt road	Washington	CT6700-00_02	41.7019	-73.2904
Shepaug River Association	Shepaug River	2474	upstream route 47	adjacent to Bee Brook Confluence	Washington	CT6700-00_01	41.6568	-73.3180
Shepaug River Association	Shepaug River	2474	upstream route 47	adjacent to Bee Brook Confluence	Washington	CT6700-00_01	41.6568	-73.3180
Shepaug River Association	SHEPAUG RIVER	5599		At Hodge Park	Roxbury	CT6700-00_01	41.5631	-73.3278
Roxbury Conservation Commission	SHEPAUG RIVER	5599		At Hodge Park	Roxbury	CT6700-00_01	41.5631	-73.3278
Shepaug River Association	Shepaug River	6023	at Dyer Plaque	1.11 miles US of Judds Bridge Rd at Steep Rock Preserve	Washington	CT6700-00_01	41.6027	-73.3380
Washington Montessori School	Shepaug River	6024		below Bantam river Confluence	Washington	CT6700-00_01	41.6830	-73.3057
Shepaug River Association	Shepaug River	6024		below Bantam river Confluence	Washington	CT6700-00_01	41.6830	-73.3057
Shepaug River Association	Shepaug River	6024		below Bantam river Confluence	Washington	CT6700-00_01	41.6830	-73.3057
Washington Montessori School	Shepaug River	6024		below Bantam river Confluence	Washington	CT6700-00_01	41.6830	-73.3057
Shepaug River Association	Shepaug River	6025		below lower shepaug dam	Litchfield	CT6700-00_02	41.7185	-73.2928
Roxbury Conservation Commission	Shepaug River	6025		below lower Shepaug dam	Litchfield	CT6700-00_02	41.7185	-73.2928
Bent of the River Audubon Center	Sprain Brook	2772	downstream	Route 47 adjacent to Papermill Road	Woodbury	TBD	41.5696	-73.2259
Ridgefield Conservation Commission	Titicus River	628	upstream	Sherwood Road	Ridgefield	CT8104-00_01	41.3287	-73.5218
Bent of the River Audubon Center	Transylvania Brook	597	25 meters downstream	Whale Road	Southbury	CT6806-00_01	41.4826	-73.2595

The Nature Conservancy- Devils Den	Umpawaug Pond Brook	2241	adjacent to	Sympaug Turnpike at RR crossing	Redding	CT7200-03_01	41.3169	-73.4443
CT Audubon Society- Citizen Science Program	Wappoquia Brook	1790	behind	CT Audubon Center at Pomfret	Pomfret	CT3709-00_01	41.8702	-71.9614
Bent of the River Audubon Center	Weekepeemee River	1975	upstream	Route 132	Woodbury	CT6804-00_01	41.5856	-73.2292
Bent of the River Audubon Center	Weekepeemee River	1468	downstream	Jacks Bridge Road at USGS gage	Woodbury	CT6804-00_01	41.5575	-73.2155
Boy Scout Troop 925, Turkey Hill School PTA	Wepawaug River	1714	downstream	Route 121	Orange	CT5307-00_03	41.2835	-73.0409
The Nature Conservancy- Devils Den	West Branch Saugatuck River	1288	at mouth	Glendenning Parking Lot	Westport	CT7203-00_01	41.1718	-73.3643
The Nature Conservancy- Devils Den	West Branch Saugatuck River	1999	at	Stonebridge Road in Open Space Property	Weston	CT7203-00_01	41.1947	-73.3875
The Nature Conservancy- Devils Den	West Branch Saugatuck River	5943	at	Godfrey Road	Weston	CT7203-00_01	41.2331	-73.3934
The Nature Conservancy- Devils Den	West Redding Brook	5946	behind	West Redding Library off Long Ridge Road	Danbury	TBD	41.3343	-73.4428
Friends of the Lake	Wewaka Brook	6129	at	2nd Wewaka Brook Road crossing up from route 133 just above Beach Hill Road	Bridgewater	CT6000-45_02	41.5010	-73.3497
The Last Green Valley Water Quality Monitoring	Whetstone Brook	6239	200 feet below Elmville Pond Waterfall	adjacent to Cat Hollow Road	Killingly	CT3404-00_01	41.8320	-71.8740
Earl Roberts	Wood River	374	downstream	Porter Pond Road near intersection w/Gallup/Homestead Road	Sterling	CT1100-00_01	41.6442	-71.8181
The Last Green Valley Water Quality Monitoring	Yantic River	6238	adjacent to Stockhouse road	in Yantic river Park	Bozrah	CT3900-00_01	41.5693	-72.1480

RAPID BIOASSESSMENT IN WADEABLE STREAMS AND RIVERS BY VOLUNTEER MONITORS
FIELD DATA SHEET

SUBMIT DATA TO: MIKE BEAUCHENE (mike.beauchene@po.state.ct.us)
PHONE (860) 424-4185

WATERBODY NAME:		COLLECTION DATE:		COLLECTION TIME:			
LOCATION DESCRIPTION:		COLLECTOR NAMES:					
TOWN:		NOTES/COMMENTS:					
MOST	1 Body builder mayfly Dreissella	2 Minnow mayfly Isonychia	3 2-tailed fat head mayfly Epeorus	4 Roach-like stonemayfly Peltoperla	8A Common stonemayfly Perlidae	8B Giant stonemayfly Pteronarcys	8C Misc Stonemayfly
	Loos 1&2						
	Loos 3&4						
Loos 5&6							
MOST	6A Saddle-Case caddis Glossosoma	6B Common Cane caddis Apatania	7 Michelin Man caddis Rhyacophila	8A Mid-size plant case caddis Brachycentrus	8B Common stone caddis Lepidostoma	DATA INTERPRETATION	
						# OF TYPES OF THE "MOST" 5 OR MORE	WATER QUALITY
	Loos 1&2					3 TO 4	EXCELLENT
	Loos 3&4					1 TO 3	VERY GOOD
Loos 5&6					0	MORE INFO NEEDED TO ASSESS	
MODERATE	9 Common net-spinner Hydropsychidae	10 Fingernet Caddis Chimarra	11 Flat Head mayfly Stenonema	12 Water Penny Psephenus	13A Dobsonfly Curculio	13B Fishfly Nigronia	14 Dragonfly & Damselfly Zygoptera
	Loos 1&2						
	Loos 3&4						
Loos 5&6							
LEAST	16A Amphipod	16B Isopod	16C Leech	16D Midge	16E Black fly	16F Snail	16G Worm
	Loos 1&2						
	Loos 3&4						
Loos 5&6							
OTHERS	Crayfish	Crane fly larvae	Rifle Beetle adults/larvae	Small minnow mayfly	Water snipe fly	Planaria	Fingemal clam/ mussel
	Present						

ALL RBV MATERIALS ARE AVAILABLE AT: <http://dep.state.ct.us/wtr/volunmon/volopp.htm>

PLEASE NOTE: BE SURE TO INCLUDE AT LEAST 1 OR 2 OF EACH ORGANISM IN YOUR VOUCHER COLLECTION!!
INCLUDE A SPECIMEN FROM EVERY TYPE YOU THINK IS A DIFFERENT, EVEN IF IT IS NOT PICTURED ON THIS
DATASHEET. IF AN ORGANISM IS NOT INCLUDED IN THE VOUCHER COLLECTION IT WILL NOT BE
INCLUDED IN THE FINAL DATA ASSESSMENT!!