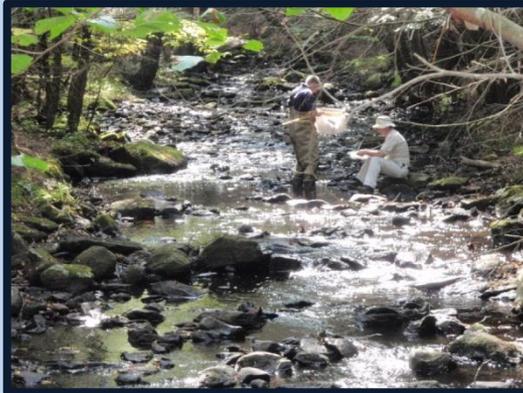


River Bioassessment by Volunteers (RBV)

Program Instructions



CT DEEP Tier 2
Volunteer Water Quality Monitoring Network



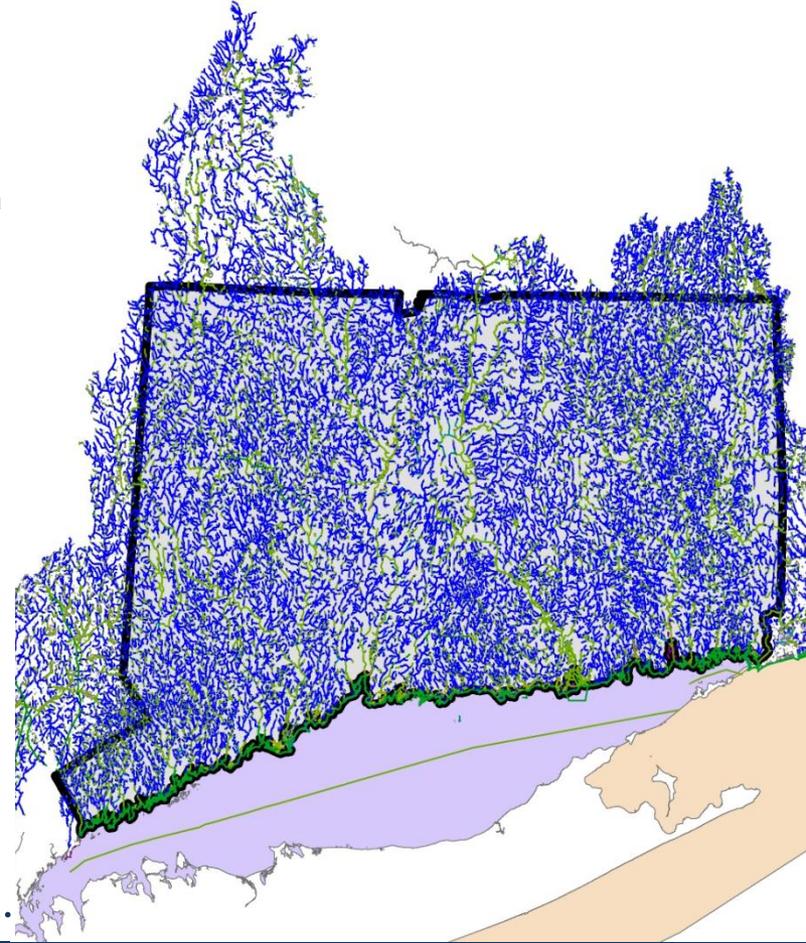
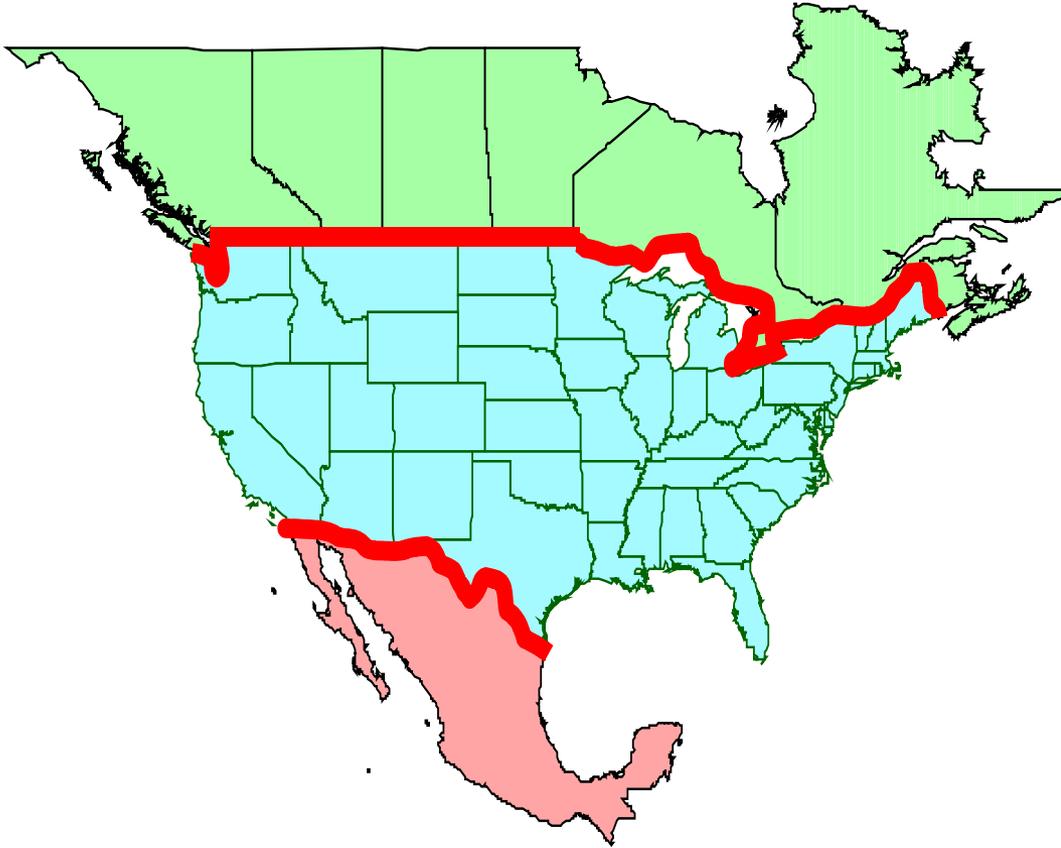
Connecticut Department of Energy and Environmental Protection

DEEP Water Quality Monitoring Efforts

- **Physical**
 - *Habitat quality*
 - *Temperature*
 - *Flow*
- **Chemical**
 - *General constituents*
 - *Nutrients*
- **Biological**
 - *Fish*
 - *Macroinvertebrates*
- **Sanitary Quality**
 - *Indicator Bacteria*
- **Tissue contaminants**
 - *Mercury*
 - *PCB*



Why do We Need Volunteers?



 US Border with Canada & Mexico ~ 5,920 mi.



Connecticut Department of Energy and Environmental Protection

CT Tiered Approach to Volunteer Monitoring

	Programs	Information	Best Uses	Limitations
Tier 1	<ul style="list-style-type: none"> • Periodic Visual Observation 	<ul style="list-style-type: none"> • Digital photos • GPS location • Written description of observations 	<ul style="list-style-type: none"> • Monitor episodic events • Document baseline channel conditions 	Resolution of issues observed often best handled at local level
Tier 2	<ul style="list-style-type: none"> • River Bioassessment by Volunteers (RBV) • Stream Temp Monitoring 	<ul style="list-style-type: none"> • Macroinvertebrate community • Temperature data 	<ul style="list-style-type: none"> • Screen for very high quality streams/rivers 	*RBV not suitable for streams with r medium to poor water quality
Tier 3	<ul style="list-style-type: none"> • Individualized including, chemistry, metals, and bacteria monitoring 	<ul style="list-style-type: none"> • Indicator bacteria • Nutrients • Metals • Flow conditions (gauge data) 	<ul style="list-style-type: none"> • Watershed plan implementation support • Source-tracking of impairments 	Requires DEEP-approved QAPP; may require EPA-approval of QAPP



River Bioassessment by Volunteers (RBV) Program



Connecticut Department of Energy and Environmental Protection

The presence of a trout in a body of water is a discrete ecological fact that nevertheless signifies certain things.



...a particular complex of biotic and chemical and physical factors
a standard of richness and purity, without which that troutly presence
is impossible....David Quammen

Aquatic Macroinvertebrates and Water Quality

- Live in wide range of water quality
- Characteristic responses to environmental stresses
- Established collection methodologies
- Ease of capture
- Rapid recovery from repeat sampling
- Life history/Limited mobility



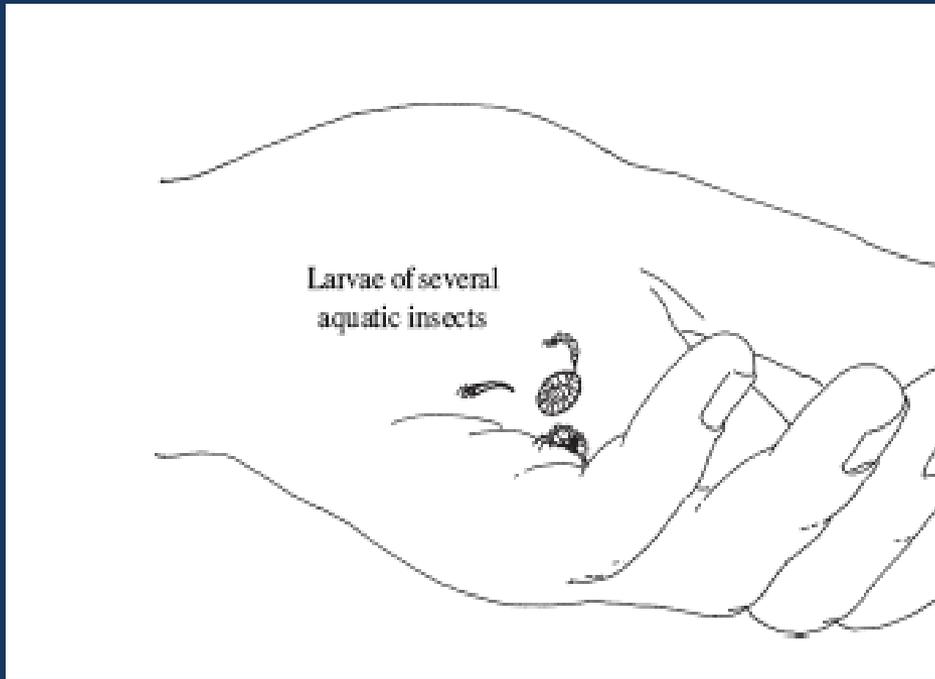
Water penny larvae



What is a Macroinvertebrate?

Macro = Can be seen with naked eye

Invertebrate = Animals without a backbone



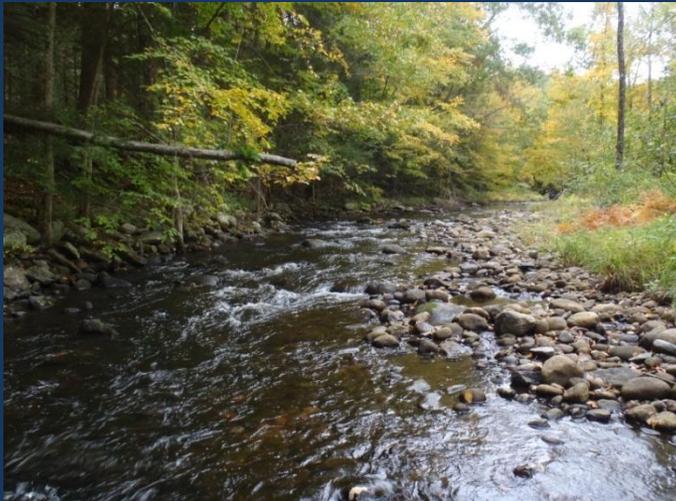
Monitoring Station Selection



- *Suitable* sites are:
 - Perennial , wadeable streams
 - Characterized by riffle habitat
 - Accessible by volunteers
 - Not immediately downstream of a discharge
- *Preferred* sites:
 - Sites suspected by DEEP to be high quality
 - Lacking sufficient data to support an assessment



Riffles



Connecticut Department of Energy and Environmental Protection

Volunteer Training



- All volunteers are required to attend annual training!
 - DEEP staff conduct trainings for groups <3 yrs experience
 - Volunteer coordinators with 3+ yrs experience approved to conduct independent trainings
- Remember to sign in!
(Coordinators copy and send sign-in sheets to DEEP)
- Training emphasizes need for attention to detail during all steps



Overview of Procedure

- Site selection (set up)
- Site photographs and GPS
- Collect (scrub & kick)
- Process (observe & Sort)
- Identify
- Voucher
- Submit
- Congratulations!



Step 1: Site Set Up



Establish the Sampling Station:

- Select an appropriate riffle area

NOTE:

If sampling at a road crossing – sample **UPSTREAM** of the crossing whenever possible



Step 1: Site Set Up

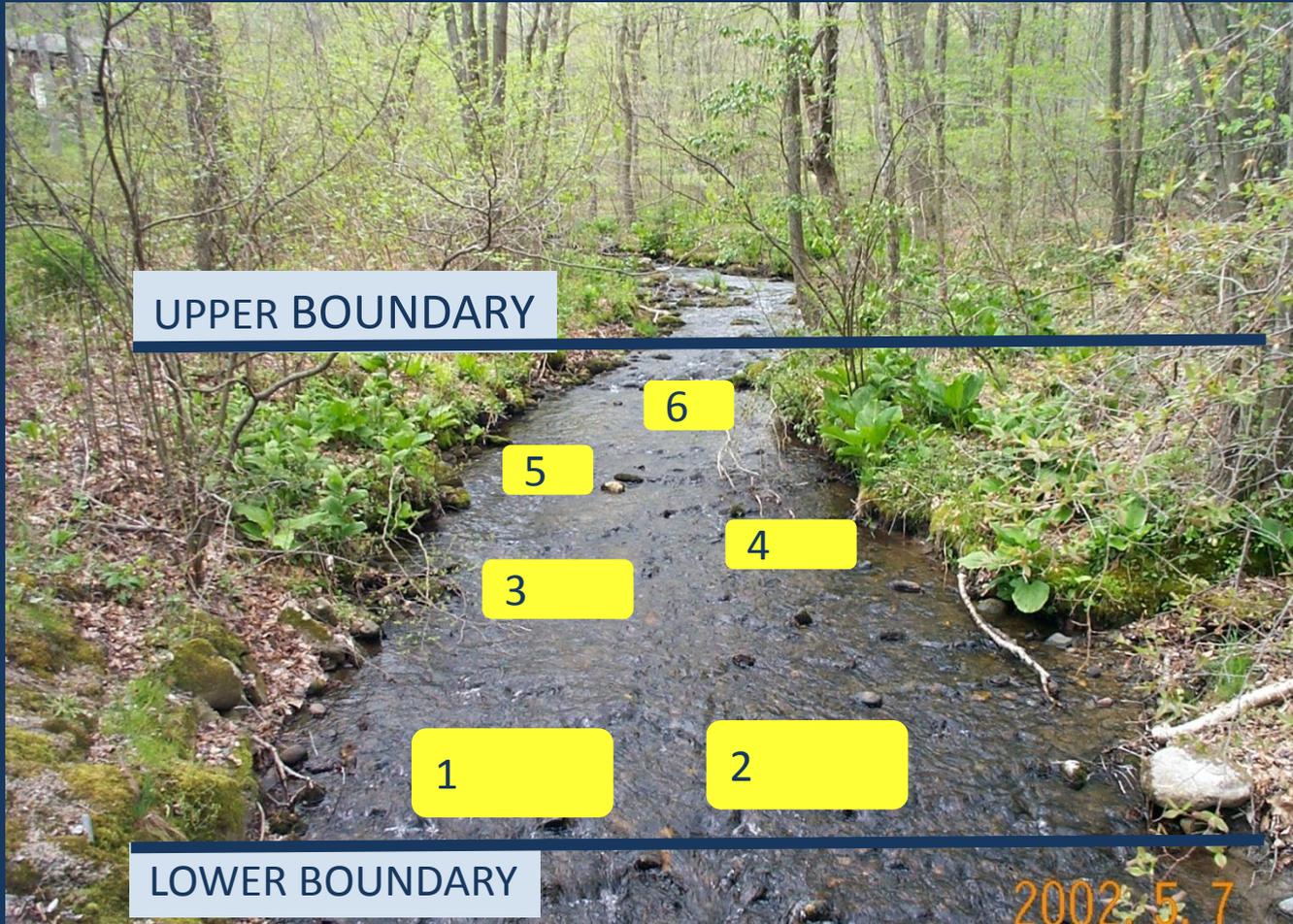


Establish the Sampling Station:

- Select an appropriate riffle area
- Define the upper and lower boundaries



Step 1: Site Set Up



Establish the Sampling Station:

- Select an appropriate riffle area
- Define the upper and lower boundaries
- Visualize where you can put the net into the water 6 times



Step 2: Site Photographs & GPS Location

- For each site take three photographs:
 - Standing at the monitoring site facing **upstream**
 - Standing at the monitoring site facing **downstream**
 - Standing on the stream bank **facing the monitoring site** (the area where the kicks will be performed)



Example downstream site photograph



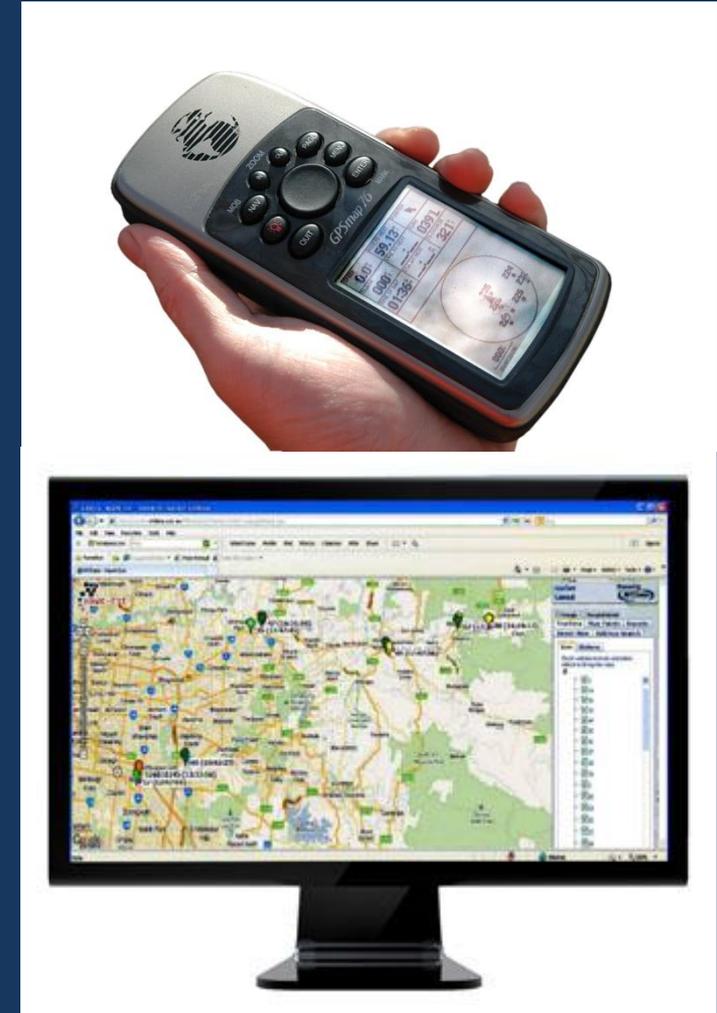
Step 2: Site Photographs & GPS Location

- Take photographs the same day as conducting the RBV event
- Try to capture the field conditions at the time of sampling - Include as much of the riparian vegetation and upstream/downstream area as possible
- Take additional photographs of unusual or unique features as needed
- *Refer to RBV program guidance document “How to Take RBV Site Photographs”*



Step 2: Site Photographs & GPS Location

- If available use a GPS (or cell-phone with GPS feature) to collect the latitude and longitude of the site – record on your datasheet
- If a GPS is not available, note the location of your site on your field map. When you return home, use an online mapping tool to determine the coordinates (e.g. Google Maps, Bing, etc.)
 - Refer to RBV program guidance document *“How to Use Google Maps to Determine Latitude & Longitude for RBV Monitoring Sites”*



Step 2: Site Photographs & GPS Location

- Record the site latitude/longitude information on your datasheet.

Revised 04/17/2013

CT DEEP River Bioassessment by Volunteers (RBV) Program -- Field Data Sheet

Stream Name:	Site Latitude/Longitude:	Take Photos of the Stream Facing:
		<input type="checkbox"/> Upstream of Site <input type="checkbox"/> Across Site <input type="checkbox"/> Downstream of Site
RBV Site Location (i.e. '100m downstream of Route 44 crossing'):		Collection Date & Time:
Site Town:	Volunteers' Names (First & Last):	Organization Responsible for Volunteers:

BEFORE PROCEEDING MAKE SURE THAT ALL FIELDS ABOVE ARE COMPLETE

DIRECTIONS: Using RBV Field Identification Cards, identify the macroinvertebrate types in your sample; check off each macroinvertebrate type found in your sample. (Note: 'sample'= 6 kicks or the 3 trays from one site combined). Place one of each type into the voucher container. Place a voucher label with the 1) stream name, 2) site location or GPS coordinates, 3) town, 4) collection date, and 5) collectors' names into the voucher. IMPORTANT: Make sure your final voucher 1) contains one of each type checked off below, 2) is filled with alcohol, 3) contains a complete label and 4) is tightly sealed.

- Check off the boxes on the datasheet to confirm you have taken each of the required site photographs.



Step 3: Collect (Scrub & Kick!!)



Collect aquatic macroinvertebrates from each of the six locations within your site. Scrub any rocks within the net first before kicking the area in front of the net vigorously for 30 seconds. Empty the contents of each pair of kicks into a white tray.



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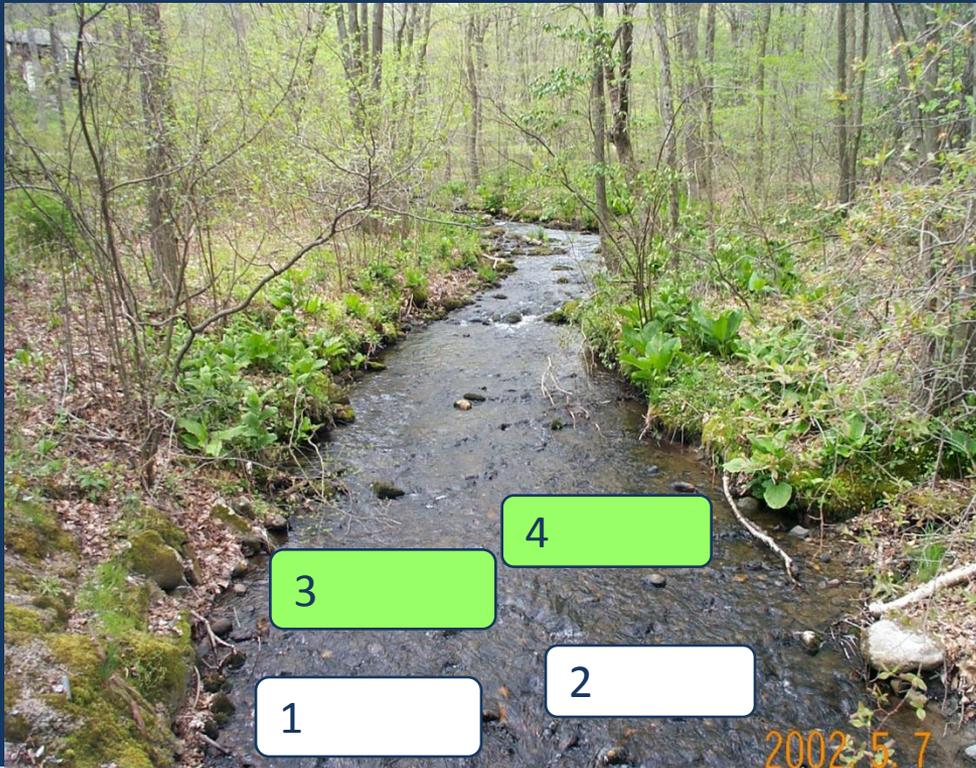
Step 3: Collect

- Collect Samples from Locations 1 & 2
- DUMP CONTENTS OF KICKS 1&2 INTO TRAY A



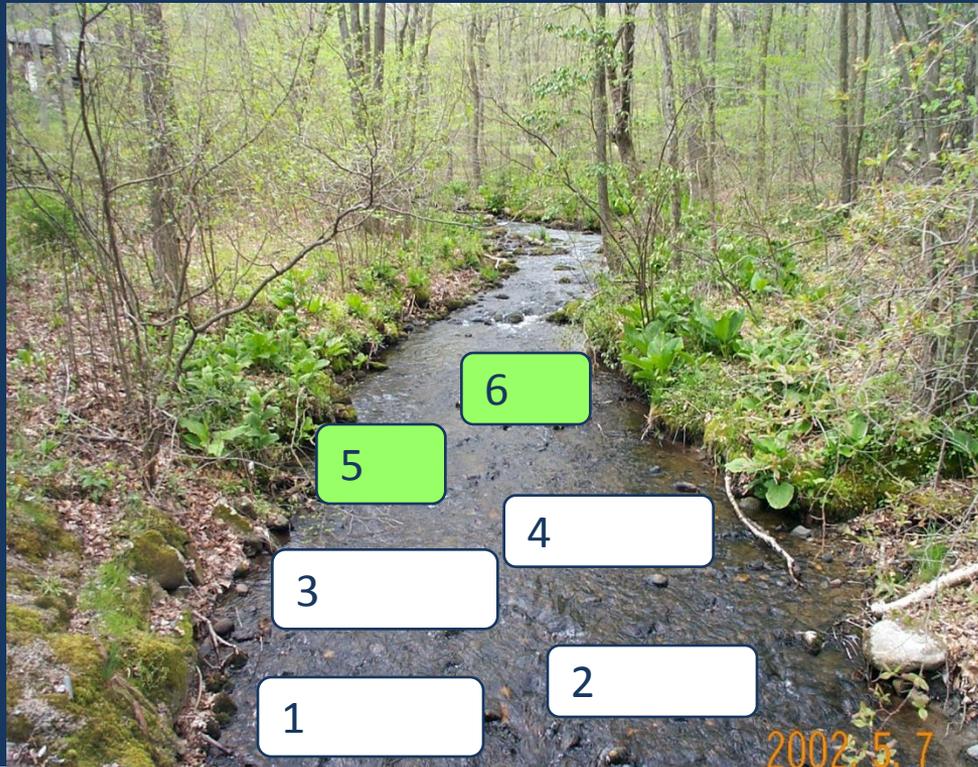
Step 3: Collect

- Collect Samples from Locations 3 & 4
- DUMP CONTENTS OF KICKS 3&4 INTO TRAY B



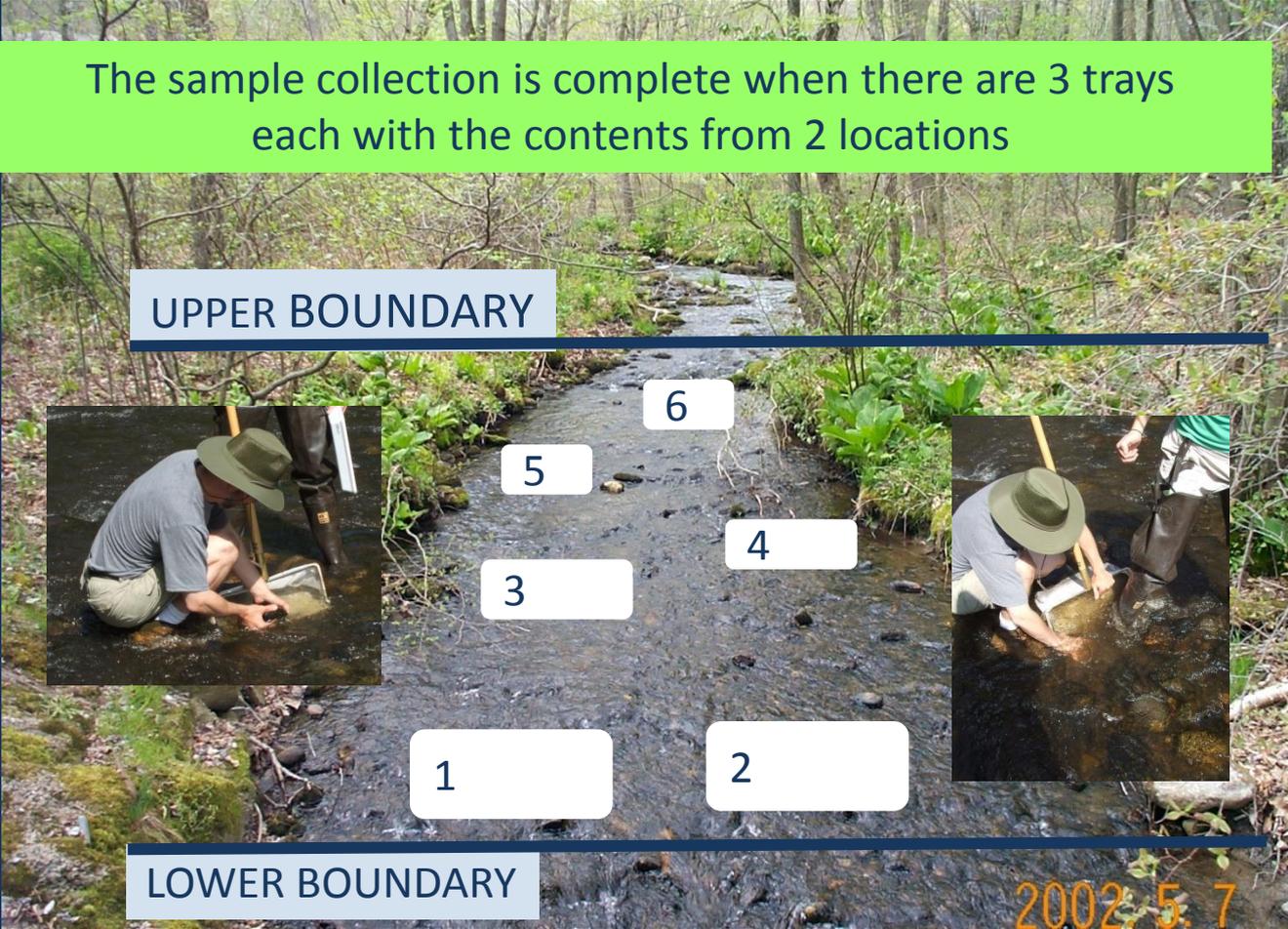
Step 3: Collect

- Collect Samples from Locations 5 & 6
- DUMP CONTENTS OF KICKS 5&6 INTO TRAY C



Step 3: Collect

The sample collection is complete when there are 3 trays each with the contents from 2 locations



Step 4: Process the Sample (Sorting)

- Experienced team leaders oversee process



Step 4: Process the sample

Pick out large debris from each tray and sort by like types into an ice cube tray



Step 4: Process the Sample



Processing is complete when you have found as many of the different types as possible and put representatives of each type into the ice cube trays



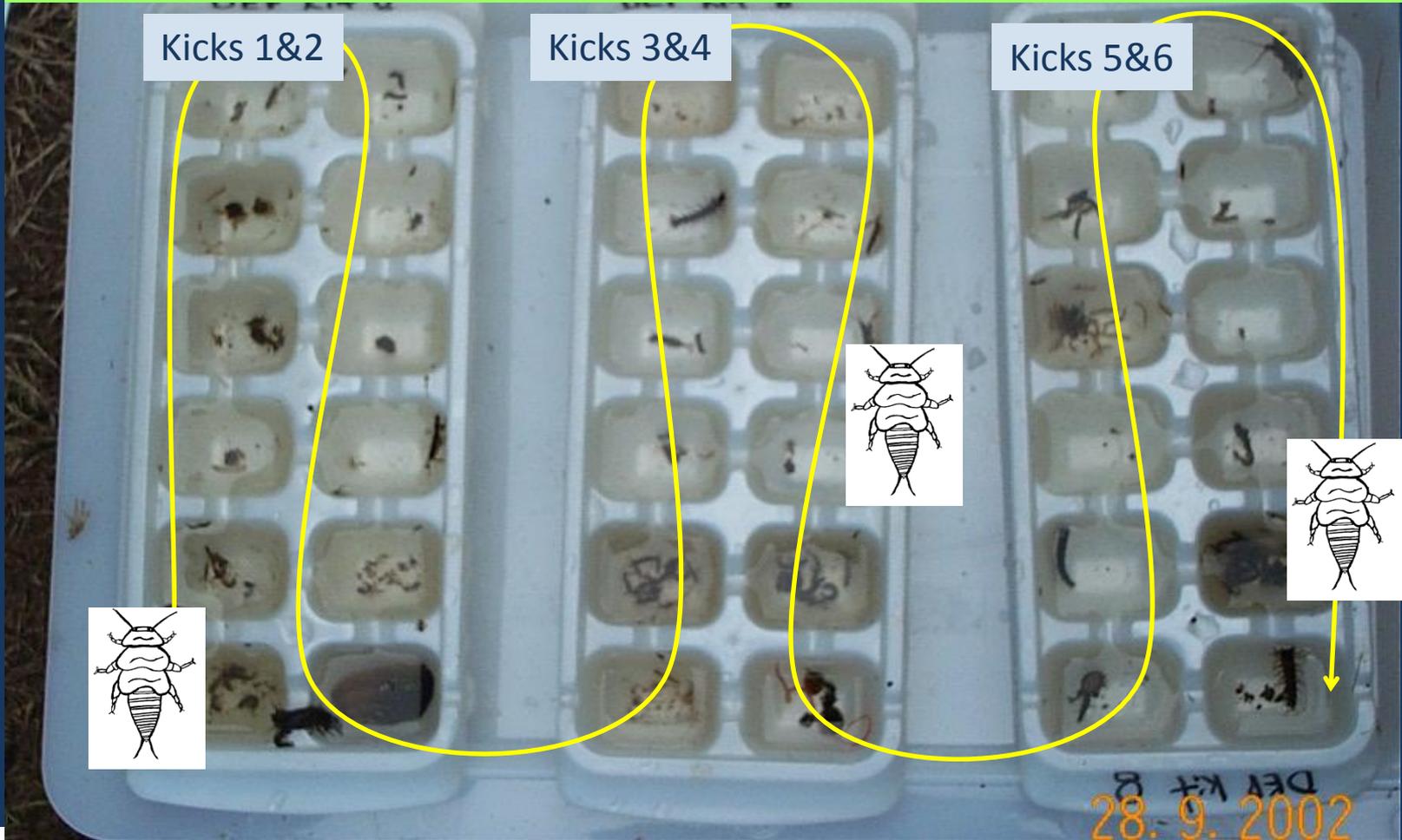
Step 5: Identify the Macroinvertebrates



Connecticut Department of Energy and Environmental Protection

Step 5: Identify

Start with the one ice cube well and weave your way through



Step 5: Identify



Revised 04/17/2013

CT DEEP River Bioassessment by Volunteers (RBV) Program -- Field Data Sheet

Stream Name:	Site Latitude/Longitude:	Take Photos of the Stream Facing: <input type="checkbox"/> Upstream of Site <input type="checkbox"/> Across Site <input type="checkbox"/> Downstream of Site
RBV Site Location (i.e., 100m downstream of Route 44 crossing):		Collection Date & Time:
Site Town:	Volunteers' Names (First & Last):	Organization Responsible for Volunteers:

BEFORE PROCEEDING MAKE SURE THAT ALL FIELDS ABOVE ARE COMPLETE

DIRECTIONS: Using RBV Field Identification Cards, identify the macroinvertebrate types in your sample; check off each macroinvertebrate type found in your sample. (Note: sample = 6 ticks or the 3 trays from one site combined). Place one of each type into the voucher container. Place a voucher label with the 1) stream name, 2) site location or GPS coordinates, 3) town, 4) collection date, and 5) collector's names into the voucher. **IMPORTANT:** Make sure your final voucher 1) contains one of each type checked off below, 2) is filled with alcohol, 3) contains a complete label and 4) is tightly sealed.

MOST WANTED (Most Sensitive to Pollution)	1	2	3	4	5A	5B	5C
	Body Builder Mayfly <i>Drunella</i>	Minnow Mayfly <i>Isonychia</i>	2-Tailed Flat Head Mayfly <i>Ephemerella</i>	Roach-Like Stonefly <i>Plecoptera</i>	Common Stonefly <i>Pteronarcys</i>	Giant Stonefly <i>Plecoptera</i>	Misc. Stonefly
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MOST WANTED (Most Sensitive to Pollution)	6A	6B	8A	8B	# Most Wanted Types:	Water Quality:	
	Saddle-Cased Caddisfly <i>Glossosoma</i>	Domagala Case Caddisfly <i>Apantesis</i>	Michelin Tire [®] Caddisfly <i>Rhyacophila</i>	Mid-Size Plant Case Caddisfly <i>Leptostoma</i>	5+	EXCEPTIONAL Fully Supporting Aquatic Life Use Goals	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	EXCELLENT Likely Supporting Aquatic Life Use Goals	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-3	NOT DETERMINED More Info Needed	

PANEL # 2

MINNOW MAYFLY

Genus: *Isonychia*
Family: Isonychiidae (Trichoptera)
Order: Trichoptera

Ecological Information
Tolerance Value = 2
Feeding Group = Collector/Filtrator

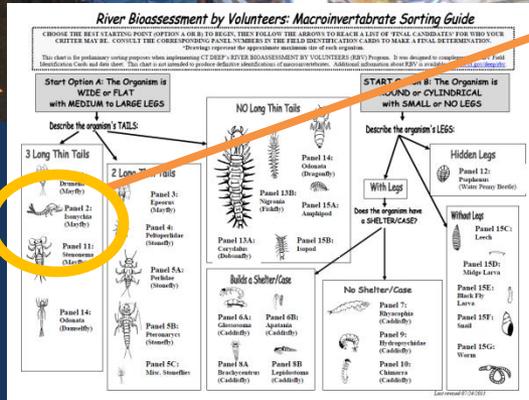
Key features to look for:
- Irregular body, rather than wide, tapered back.
- Point legs have long hairs on the inside edge.
- 2 broken like tails at the end of the abdomen.
- Single set of wing pads.
- Small, small gills on the side of the abdomen.
- Dark colored body sometimes with a yellow stripe.
- Large size (approximately 3-4 inches).

Key behaviors to look for:
- They are the strongest in an extremely strong stream.
- They are foraging both back and forth rapidly.
- They may fly when stands on logs, leaves and sticks.

Notes of Note:
- They present in a sample, these organisms are very to located in the top. They are extremely fast and strong swimmers. Unlike most mayfly nymphs, the body is rather than it is wide. Look for the 2 tails with very small heads. The tail set as one, propelling the nymph through the water.

MOST WANTED

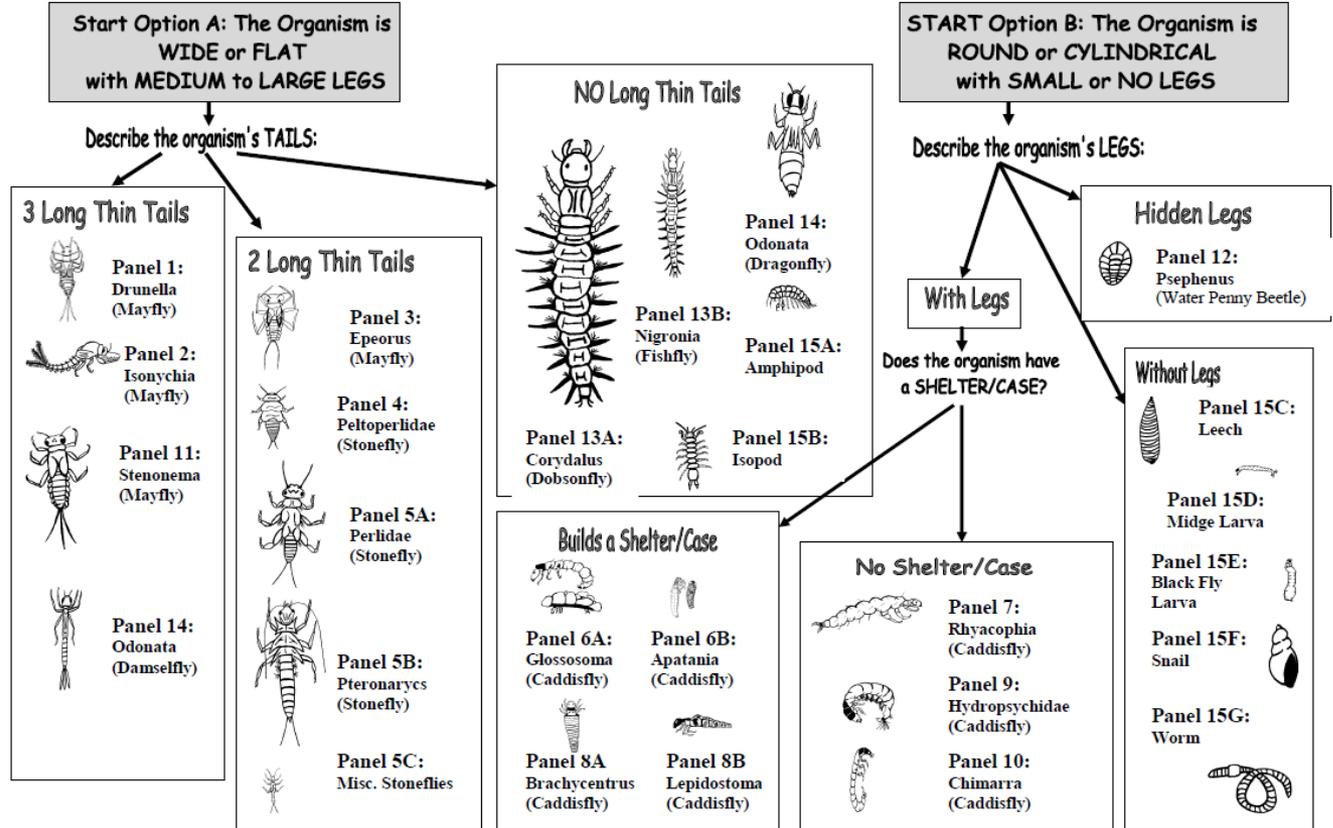
Panel 2 of pocket guide.



Step 5: Identify -- RBV Sorting Guide

River Bioassessment by Volunteers: Macroinvertebrate Sorting Guide

CHOOSE THE BEST STARTING POINT (OPTION A OR B) TO BEGIN, THEN FOLLOW THE ARROWS TO REACH A LIST OF 'FINAL CANDIDATES' FOR WHO YOUR CRITTER MAY BE. CONSULT THE CORRESPONDING PANEL NUMBERS IN THE FIELD IDENTIFICATION CARDS TO MAKE A FINAL DETERMINATION.
 *Drawings represent the approximate maximum size of each organism.
 This chart is for preliminary sorting purposes when implementing CT DEEP's RIVER BIOASSESSMENT BY VOLUNTEERS (RBV) Program. It was designed to complement the RBV Field Identification Cards and data sheet. This chart is not intended to produce definitive identifications of macroinvertebrates. Additional information about RBV is available at www.ct.gov/deep/rbv.



Last revised 07/24/2013



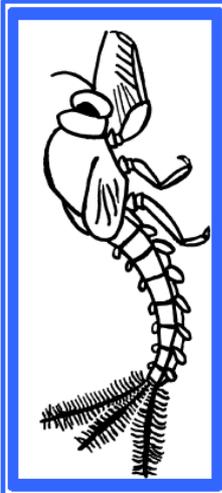
Step 5: Identify -- Field Identification Cards

PANEL # 2

MINNOW MAYFLY

Genus *Isonychia*
 Family Isonychidae (Oligoneuridae)
 Order Ephemeroptera

Ecological Information
 Tolerance Value = 2
 Feeding Group = Collector-Filterer



- Key features to look for:**
- Streamlined body, taller than wide, humped back.
 - Front legs have many long hairs on the inside edge.
 - 3 feathery-like tails at the end of the abdomen.
 - Single set of wing pads.
 - Small round gills on the sides of the abdomen.
 - Dark colored body sometimes with a yellow stripe.
 - Large size (approximately 3/4 inch).

- Key behaviors to look for:**
- This mayfly nymph is an extremely strong swimmer.
 - It swims by undulating back and forth very rapidly.
 - The mayfly often stands on rocks, leaves and sticks.

Points of Note:
 When present in a sample, these organisms are easy to locate in the tray. They are extremely fast and strong swimmers. Unlike most mayfly nymphs, the body is taller than it is wide. Look for the 3 tails each with many small hairs. The tails act as an oar, propelling the nymph through the water.

MOST WANTED

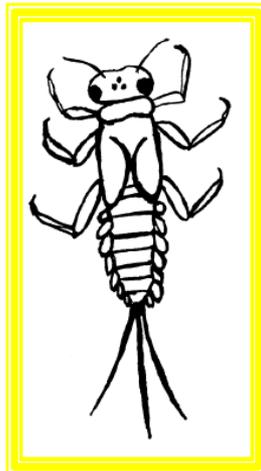
RBV Field Identification Card Panel 2

PANEL # 11

FLAT-HEAD MAYFLY

Genus *Stenonema*
 Family Heptageniidae
 Order Ephemeroptera

Ecological Information
 Tolerance Value = 4
 Feeding Group = Scraper



- Key features to look for:**
- Very flat body with long thin legs.
 - 3 very long tails at the end of the abdomen.
 - Single set of wing pads.
 - Small round gills on the sides of the abdomen.
 - Very broad flat head with large eyes.

- Key behaviors to look for:**
- This mayfly nymph is very mobile and can move and swim fast when in water.
 - Doesn't move well in the net.
 - Occasionally it may swim by undulating from side to side.
 - It will try to hide on any flat dark colored object like stones, leaves, and other invertebrates.

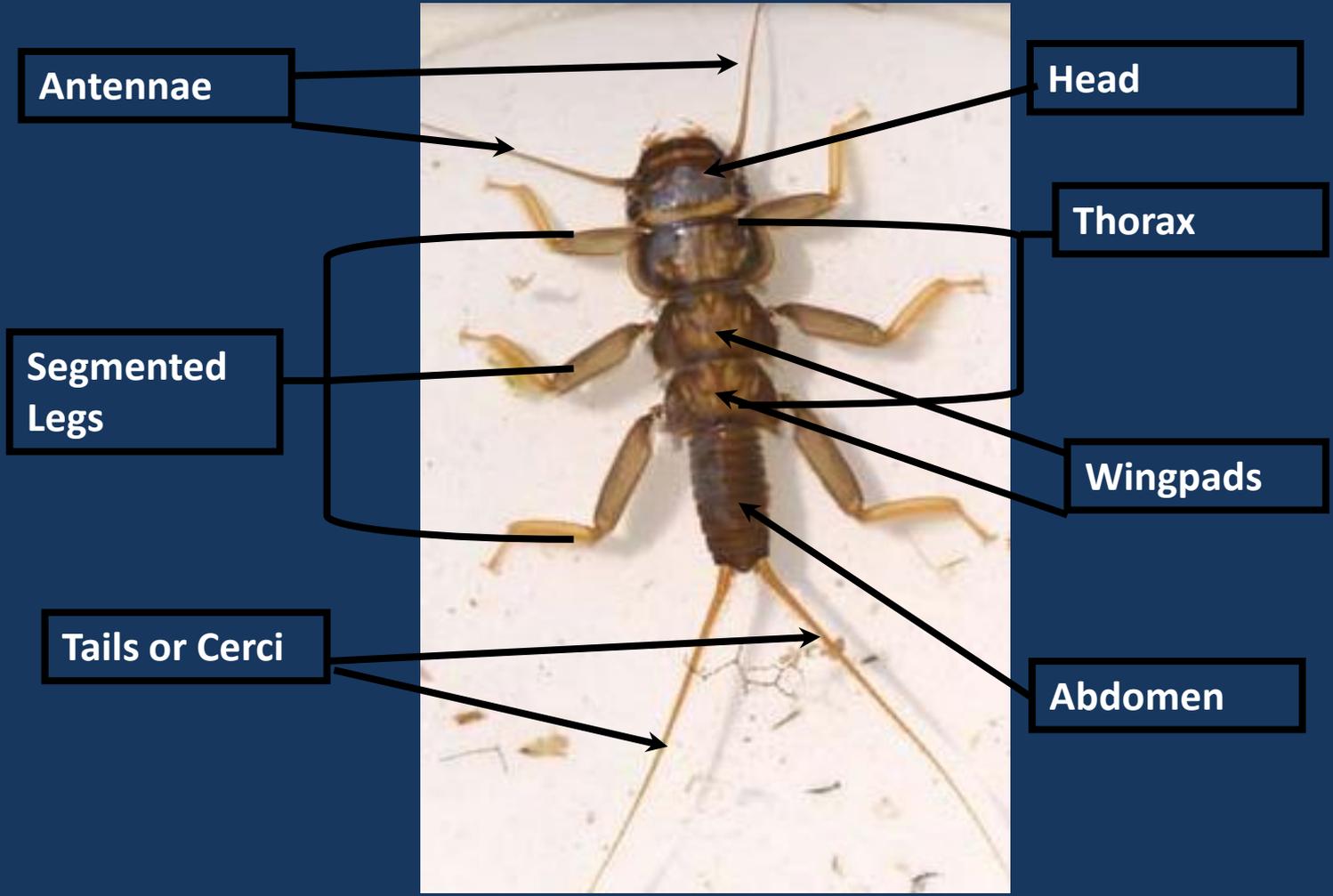
Points of Note:
 This mayfly can be found in many of the streams across Connecticut. They can be found by slowly lifting cobbles out of the water. They may run to the other side of the rock. Be sure not to confuse this organism with the 2-tailed version (*Epeorus*). The legs, gills, and tails tend to break off during the collection process.

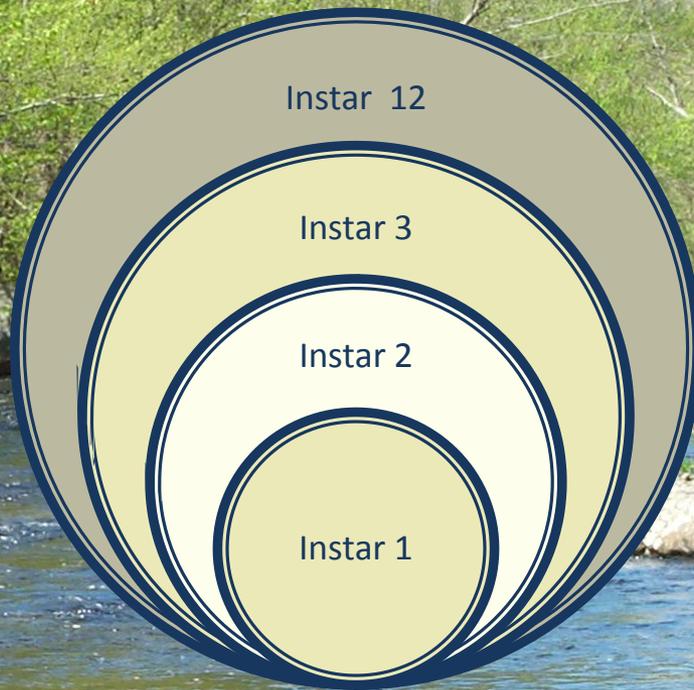
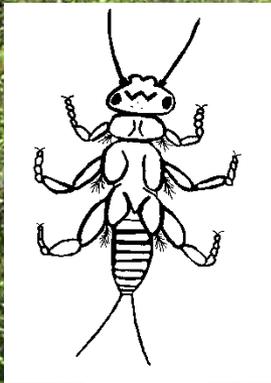
MODERATELY WANTED

RBV Field Identification Card Panel 11



Insect Anatomy Overview





Step 5: Identify

Complete the top of your datasheet.
 Check off all of the macroinvertebrate types that were present in your sample (all 6 kicks combined)



Revised 04/17/2013

CT DEEP River Bioassessment by Volunteers (RBV) Program -- Field Data Sheet

Stream Name:		Site Latitude/Longitude:		Take Photos of the Stream Facing: <input type="checkbox"/> Upstream of Site <input type="checkbox"/> Across Site <input type="checkbox"/> Downstream of Site	
RBV Site Location (i.e. "100m downstream of Route 44 crossing):				Collection Date & Time:	
Site Town:		Volunteers' Names (First & Last):		Organization Responsible for Volunteers:	

BEFORE PROCEEDING MAKE SURE THAT ALL FIELDS ABOVE ARE COMPLETE

DIRECTIONS: Using RBV Field Identification Cards, identify the macroinvertebrate types in your sample; check off each macroinvertebrate type found in your sample. (Note: sample = 6 kicks or the 3 trays from one site combined). Place one of each type into the voucher container. Place a voucher label with the 1) stream name, 2) site location or GPS coordinates, 3) town, 4) collection date, and 5) collectors' names into the voucher. **IMPORTANT:** Make sure your final voucher 1) contains one of each type checked off below, 2) is filled with alcohol, 3) contains a complete label and 4) is lightly sealed.

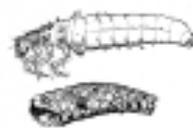
MOST WANTED <small>(Most Sensitive to Pollution)</small>	1 Body Builder Mayfly <i>Drunella</i>	2 Minnow Mayfly <i>Isonychia</i>	3 2-Tailed Flat Head Mayfly <i>Epeorus</i>	4 Roach-Like Stonefly <i>Plecoptera</i>	5A Common Stonefly <i>Pteronarcyx</i>	5B Giant Stonefly <i>Pteronarcyx</i>	5C Misc. Stonefly
	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
MOST WANTED <small>(Most Sensitive to Pollution)</small>	6A Saddle-Case Caddis <i>Glossosoma</i>	6B Cornuopis Case Caddis <i>Apantia</i>	7 Michalini Mead Caddis <i>Rhyacophila</i>	8A Mid-Size Plant <i>Brachycentrus</i>	8B Case Caddis <i>Leptostoma</i>	# Most Wanted Types:	Water Quality:
	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>		
MODERATELY <small>(Moderately Sensitive to Pollution)</small>	9 Common net-spinner <i>Hydropsychidae</i>	10 Fingernet Caddis <i>Chimarra</i>	11 Flat Head Mayfly <i>Stenonema</i>	12 Water Penny <i>Psephenus</i>	13A Dobsonfly <i>Corydalis</i>	13B Fishfly <i>Nigronia</i>	14 Dragonfly/Damselfly <i>Odonata</i>
	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
LEAST WANTED <small>(Least Sensitive to Pollution)</small>	15A Amphipod <i>Amphipoda</i>	15B Isopod <i>Isopoda</i>	15C Leech	15D Midge	15E Black Fly <i>Simuliidae</i>	15F Snail	15G Worm
	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
OTHERS	Other Commonly Collected Riffle-Dwelling Macroinvertebrates						
	Crayfish*	Crane Fly Larvae <i>Tipulidae; Hexatoma</i>	Riffle Beetle <i>Elmidae</i>	Small Minnow Mayfly <i>Baetidae</i>	Water Snipe Fly <i>Atherix</i>	Planaria	Fingernail Clam/Mussel <i>(Bivalves)</i>
	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>

Additional Volunteer Comments:

COORDINATORS PLEASE DROP OFF DATASHEETS AND VOUCHERS TO: MEGHAN RUTA, CT DEEP, 70 ELM STREET, HARTFORD, CT
 RBV Program Information is available at www.ct.gov/deep/rbv or by calling 860-424-3061.



“Most Wanted” Macroinvertebrates

MOST WANTED (Most Sensitive to Pollution)	1 Body Builder Mayfly <i>Drunella</i>	2 Minnow Mayfly <i>Isonychia</i>	3 2-Tailed Flat Head Mayfly <i>Epeorus</i>	4 Roach-Like Stonefly <i>Peltoperlidae</i>	5A Common Stonefly <i>Perlidae</i>	5B Giant Stonefly <i>Pteronarcys</i>	5C Misc. Stonefly			
										
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	MOST WANTED (Most Sensitive to Pollution)	6A Saddle-Case Caddis <i>Glossosoma</i>	6B Cornucopia Case Caddis <i>Apatania</i>	7 Michelin Man' Caddis <i>Rhyacophila</i>	8A Mid-Size Plant Case Caddis <i>Brachycentrus</i>	8B Case Caddis <i>Lepidostoma</i>	# Most Wanted Types:	Water Quality:		
									5+	EXCEPTIONAL: Fully Supporting Aquatic Life Use Goals
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			4	EXCELLENT: Likely Supporting Aquatic Life Use Goals
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			0-3	NOT DETERMINED: More Info Needed
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				



Step 6: Prepare a Voucher



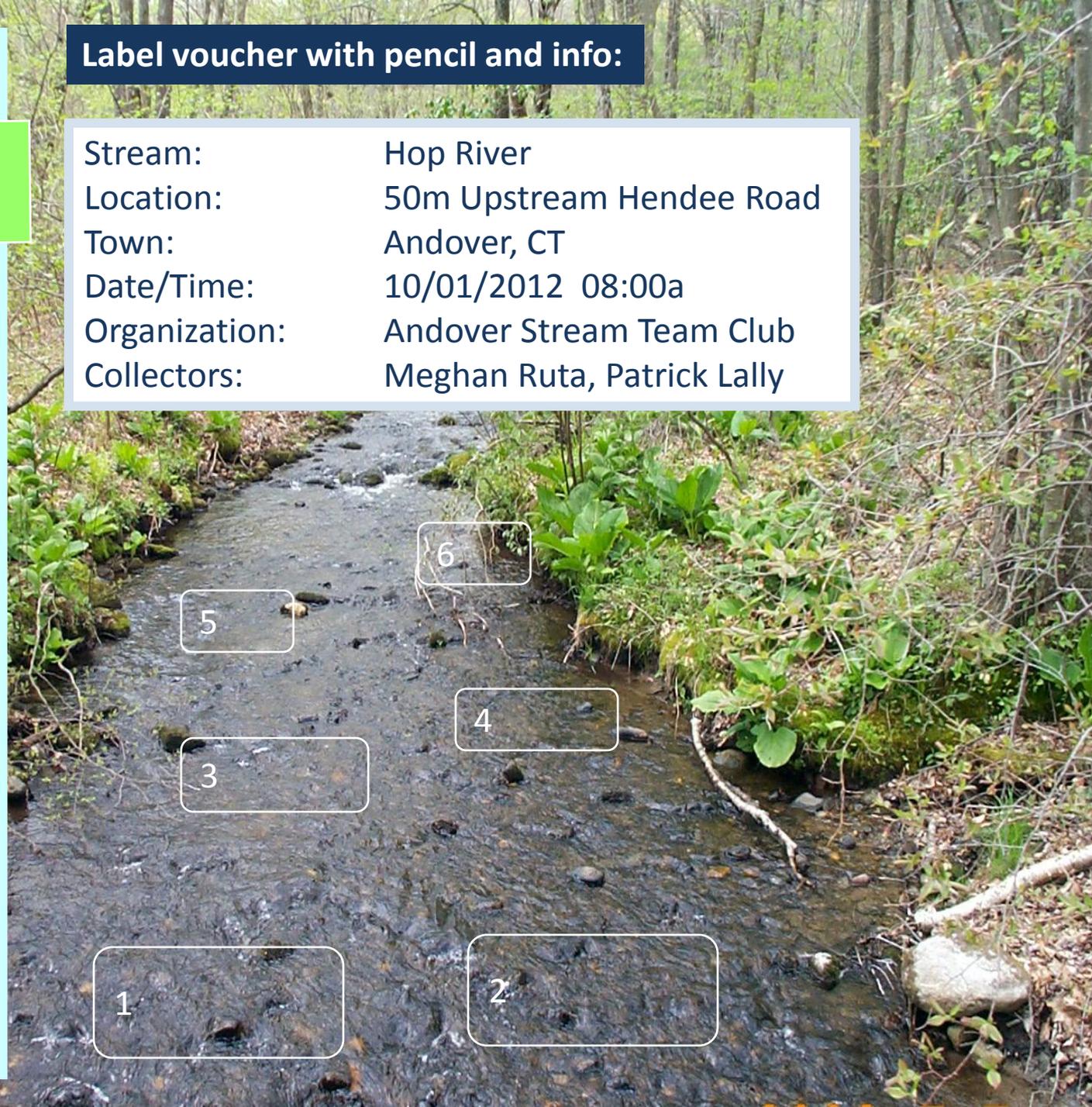
CRITICAL STEP!!

- The voucher contains at least 1 of each different type of organisms collected at the site.
- Vouchers are labeled with site information and date
- Vouchers are reviewed by local coordinator and submitted to DEEP for verification



Label voucher with pencil and info:

Stream: Hop River
Location: 50m Upstream Hendee Road
Town: Andover, CT
Date/Time: 10/01/2012 08:00a
Organization: Andover Stream Team Club
Collectors: Meghan Ruta, Patrick Lally



DEEP Bottom Line: The Voucher IS the Data



RBV RULE #1:

Regardless of what the datasheet says...

IF IT IS NOT IN THE VOUCHER, IT DID NOT EXIST AT THE SITE.

No exceptions.



Step 7: Submit Data, Voucher, Photos

- For each site monitored, **Volunteers are responsible for submitting** the following to their local RBV Coordinator:
 - **Three photographs** for each site monitored: upstream-facing , downstream facing, and of site at location sampled
 - **One datasheet** per site. Make sure to complete all fields, and write legibly!
 - **One voucher** per site. Remember to place a label on the inside with the stream name, location sampled (map description and/or GPS coordinates), date and time, name of collectors



Step 7: Submit Data, Voucher, Photos

- **Local RBV Coordinators are responsible for** packaging and submitting the following to the DEEP Volunteer Monitoring Coordinator:
 - **A master list of sites sampled**
 - Include the stream name, location description, town, GPS coordinates, date sampled, and names of volunteers involved for each site
 - **Training Day Volunteer Sign-In Sheet**
 - Include first and last name, and complete street address of each volunteer.
 - **Compiled volunteer packets (photographs, datasheets, vouchers)**
 - Submit photos either via email or on a CD/USB stick. Photographs should be digital and files must be renamed or otherwise organized to indicate the stream name and date sampled/photo taken.



Step 7: Submit Data, Voucher, Photos

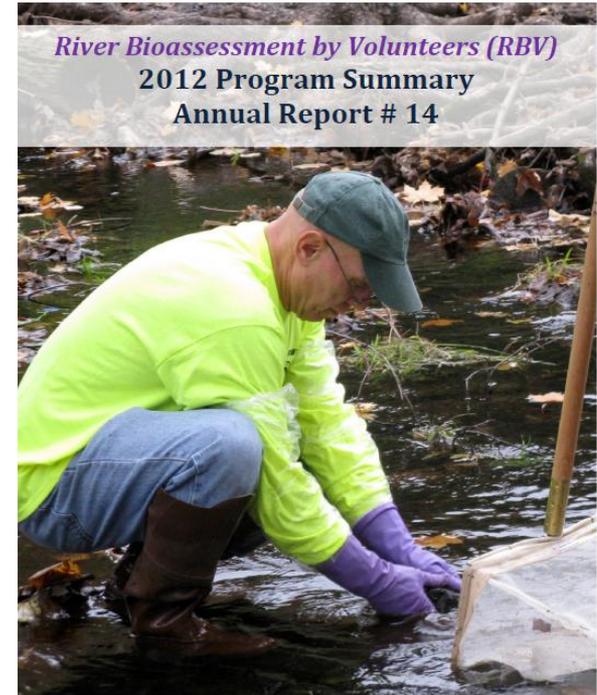
Local RBV coordinators send all materials to:

Meghan Ruta
Volunteer Monitoring Coordinator
CT DEEP
79 Elm Street
Hartford, CT 06106-5127
(860) 424-3061
Meghan.ruta@ct.gov

****Do NOT mail vouchers!!****



Connecticut Department of Energy and Environmental Protection



State of Connecticut
Department of Energy and Environmental Protection
Bureau of Water Protection & Land Reuse

Maximizing Your Efforts



Connecticut Department of Energy and Environmental Protection

Opportunities for Introduction of Error

Sampling Mistakes:

- Collect from terrible habitat
- Collect under terrible conditions
- Inadequate sorting
 - Too much material and/or muddied water
 - Rushed due to nuisance insects, weather, hunger, etc.
- Over generous lumping of types







09/21/2005



Opportunities for Introduction of Error

Voucher Preparation Mistakes:

- Not placing representative in voucher (Rule #1...)
 - Thinking someone else put it in already
- No alcohol or too little alcohol
- Vague location descriptions (“suburban stream”)
- Not including a label
- Writing the label in pen (vanishing ink!)
- Worst case scenario: Label contains incorrect stream name
(Big big BIG no-no!!)



Field Safety Reminders



Connecticut Department of Energy and Environmental Protection

Stream Access Considerations

Things to Consider:

- PARKING/TRAFFIC
- STEEP BANKS
- POISON IVY/PRICKER BUSHES
- ANGRY LANDOWNERS



Hazards in the Field

WADING IN THE STREAM

- SLIPPERY ROCKS
- FAST FLOW
- DEEP SPOTS
- COLD WATER

COLLECTING THE ORGANISMS

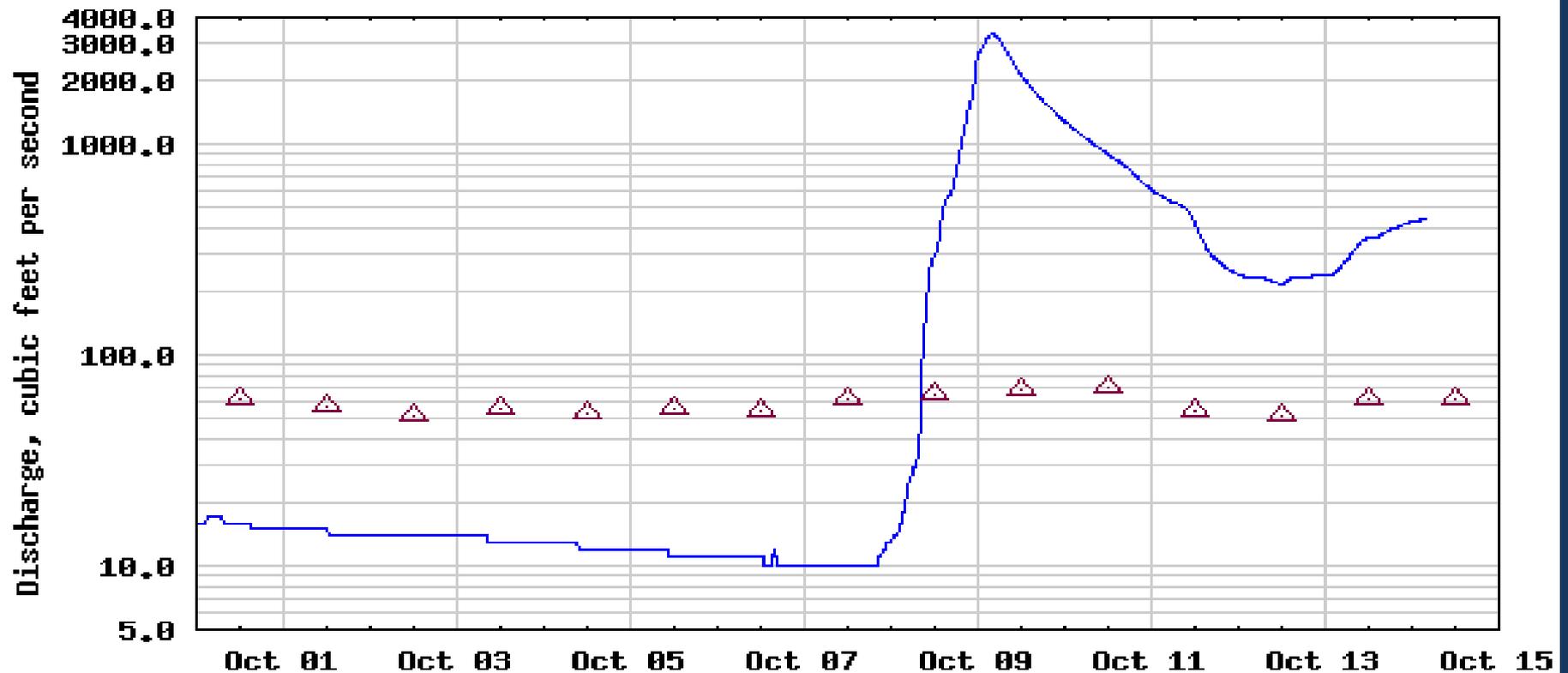
- HIDDEN SHARP DEBRIS
 - GLASS
 - METAL
 - OTHER



**Do NOT sample
under high flow conditions!**



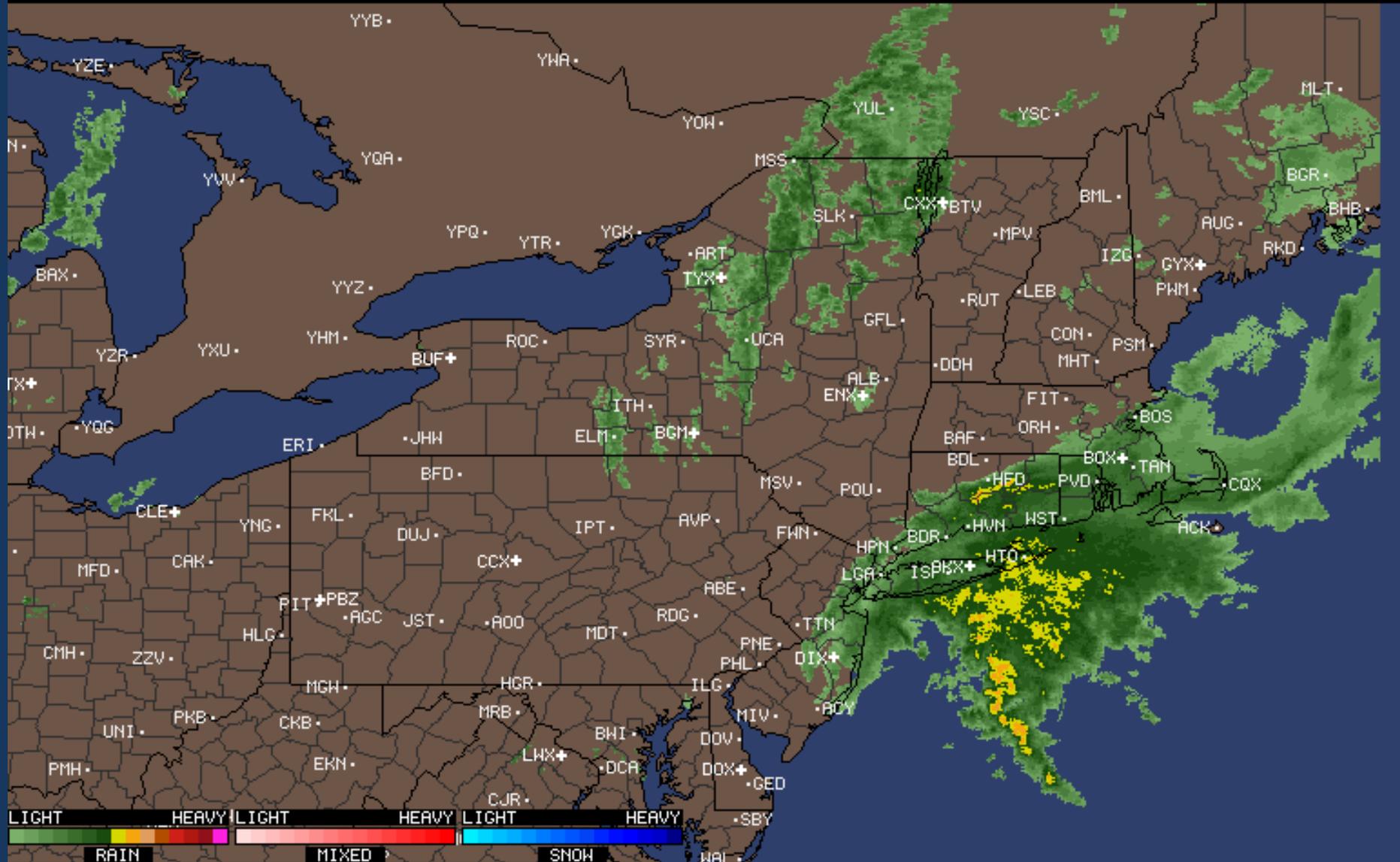
USGS 01186500 STILL RIVER AT ROBERTSVILLE, CT.



----- EXPLANATION -----

- DISCHARGE
- △ MEDIAN DAILY STREAMFLOW BASED ON 53 YEARS OF RECORD

Provisional Data Subject to Revision





Questions?

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