



Volunteer Water Quality Monitoring Program

River Bioassessment for Volunteers

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Program support provided by Connecticut Audubon Society Center at Pomfret

The Last Green Valley

- ▶ Originally known as The Quinebaug and Shetucket Rivers National Heritage Corridor
- ▶ Designated in 1994
- ▶ Expanded in 1999
- ▶ The Last Green Valley
- ▶ 26 Connecticut towns
- ▶ 9 Massachusetts towns
- ▶ Reauthorized through 2021
- ▶ Funded in part by the National Parks Service*
- ▶ Membership \$ help support TLGV programs



The Last Green Valley WQM

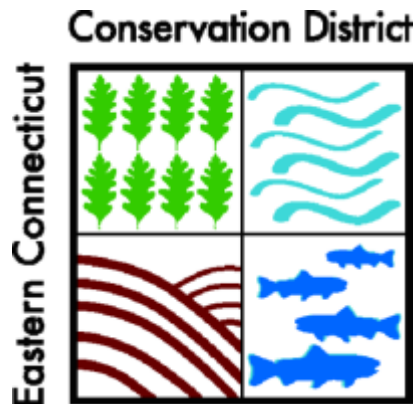
- ▶ Initiated in 2006
- ▶ Mission is to engage volunteers in all 35 TLGV towns in WQM
- ▶ Multiple methods of WQM used depending on location and season
- ▶ More than 100 people/year are involved in some capacity (and the teams are growing)



Volunteer Water Quality Monitoring Program

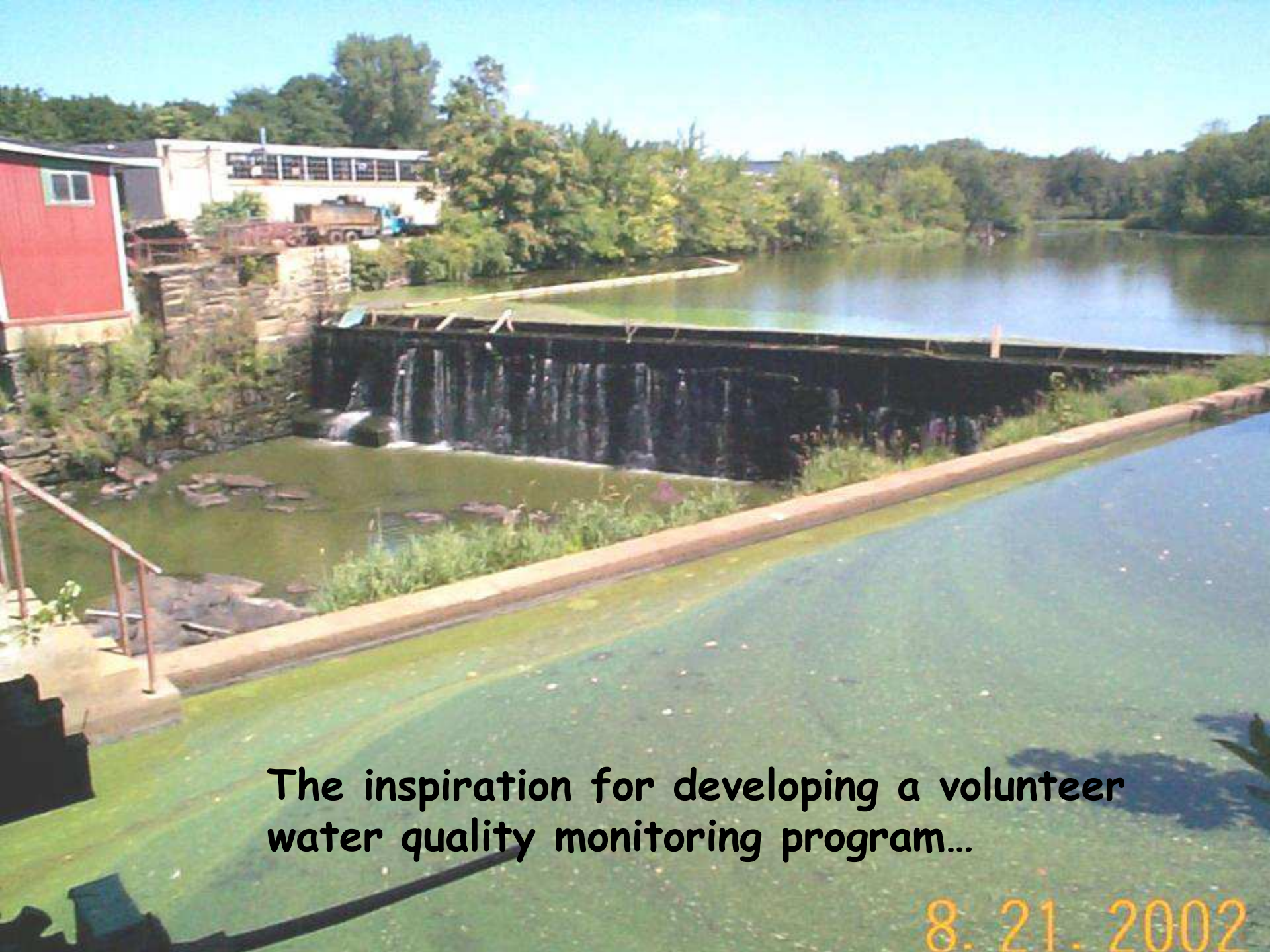
is a partnership between The Last Green Valley, Inc. and the Eastern Connecticut Conservation District

(and many other partners, too)



Who are you?

- ▶ What is your Name?
- ▶ What town you are from?
- ▶ Have you been through the training before?
- ▶ How did you learn about today's training?
- ▶ Did you sign in?
- ▶ What is your favorite location in The Last Green Valley?



**The inspiration for developing a volunteer
water quality monitoring program...**

8.21.2002

The Last Green Valley WQM

- ▶ Physical and Chemical Monitoring
- ▶ Nutrient Monitoring
- ▶ Visual Assessments
- ▶ Bioassessments
- ▶ Bacteria monitoring
- ▶ Secchi Disk monitoring (lakes)
- ▶ HOBO stream temperature monitoring
- ▶ Cyanobacteria monitoring?

How clean is the water in The Last Green Valley ?

Clean Water Act simplified

- ▶ Fishable?
- ▶ Swimmable?

What is in your packet?

- ▶ Riffle Bioassessment for Volunteers Field Instruction sheet
- ▶ Sample data sheet
- ▶ Rapid bioassessment insect key
- ▶ “Volunteers at Work” letter
- ▶ DEEP Photo permission form
- ▶ Didymo flyer

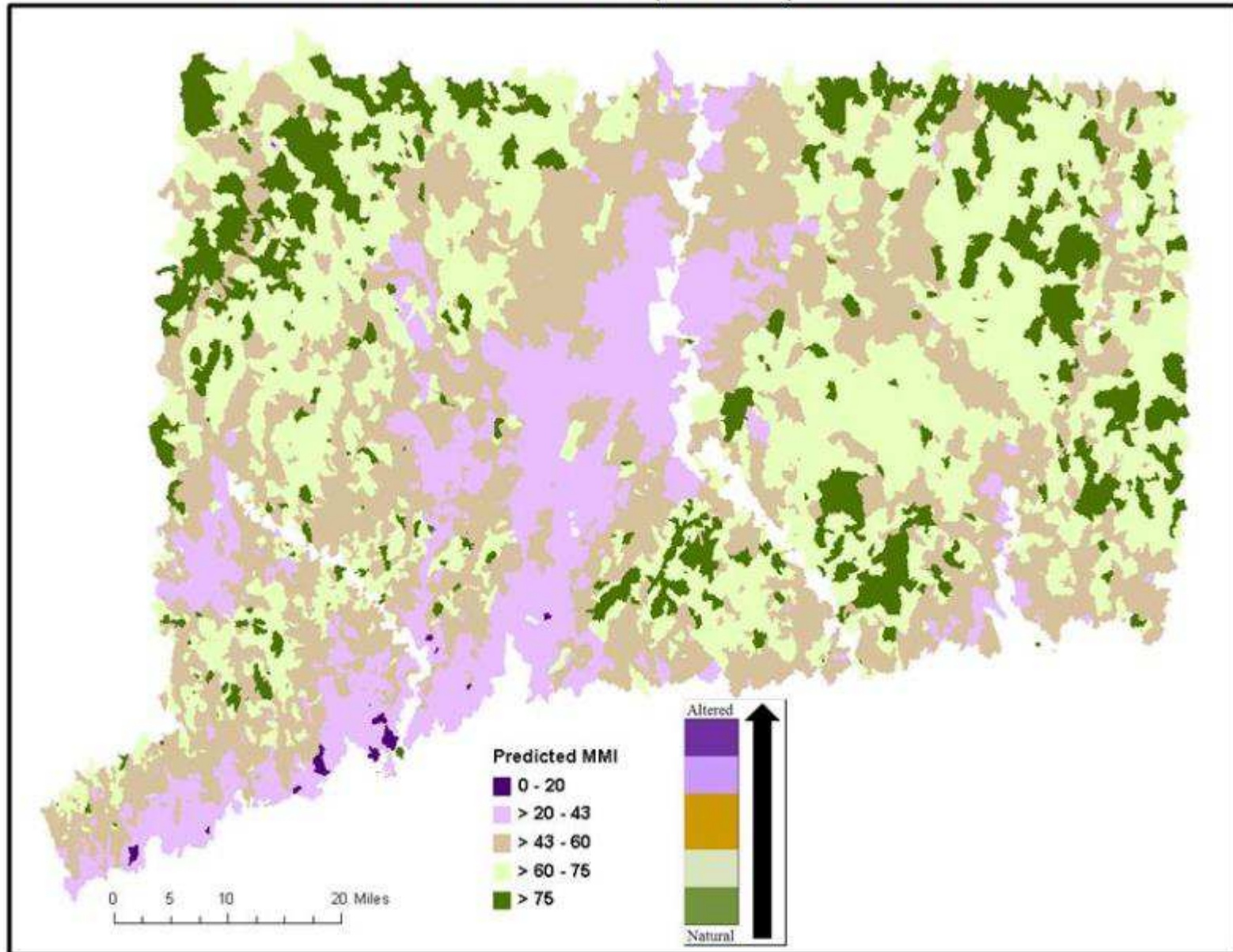
Available for you to take home

- ▶ The Last Green Valley *Walktober* guide
- ▶ ECCD newsletter
- ▶ CT Audubon Society Fall newsletter

Transition to DEEP RBV training program

Connecticut Macroinvertebrate Multimetric Index (MMI) Model

Connecticut stream health condition as predicted by CT DEEP MMI model.

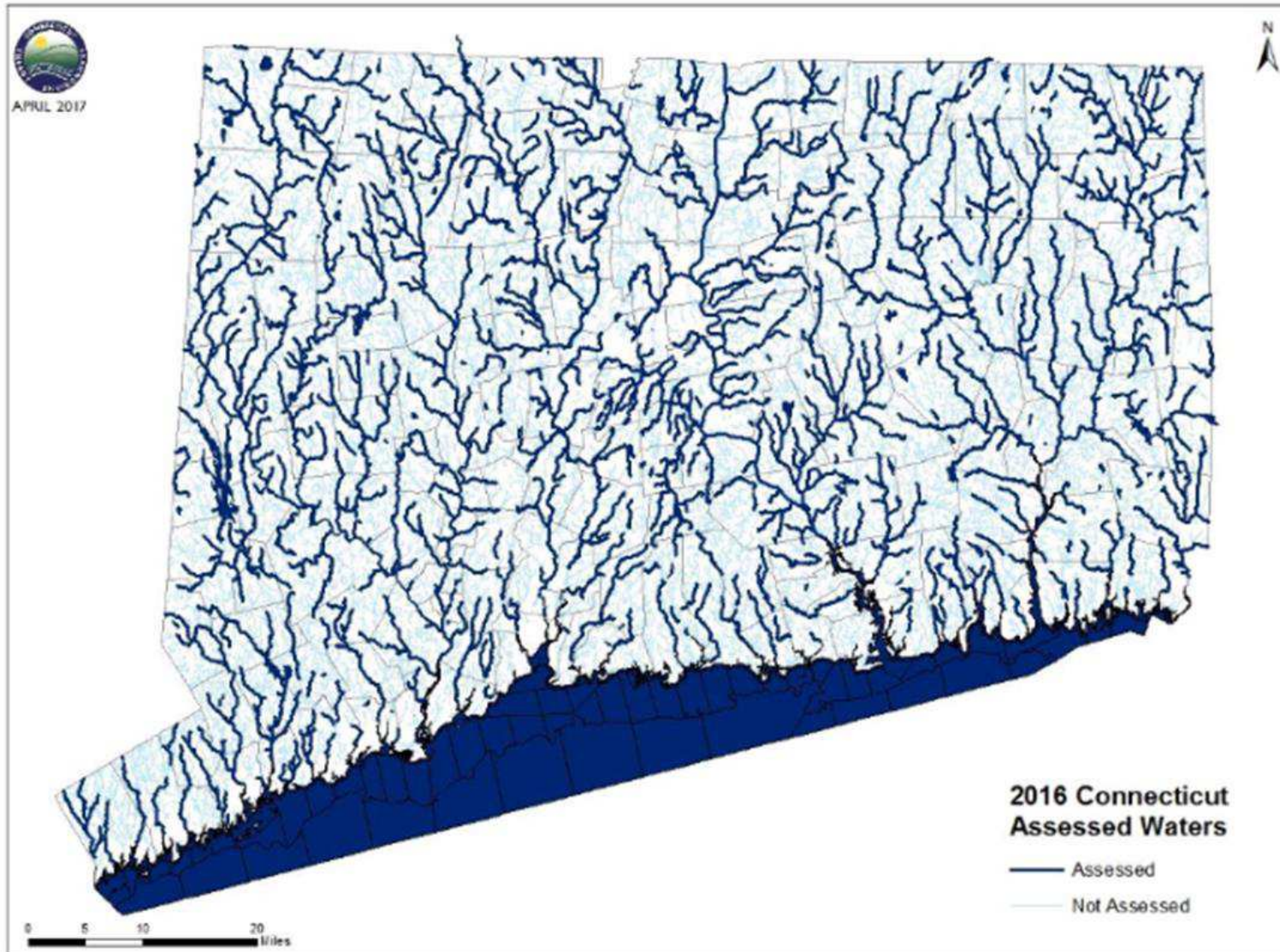


When should I sample?

- ▶ The RBV program is designed to take place between September 1 and November 30 in the fall.
- ▶ TLGV may also coordinate teams interested in spring monitoring.
- ▶ Many volunteers prefer to sample in September when the weather is warmer.
- ▶ A better diversity of bugs may be found later in the fall season when the stream flow picks up and leaves (a food source) have falling into the stream.

Connecticut DEEP Waterbody Assessment Segments

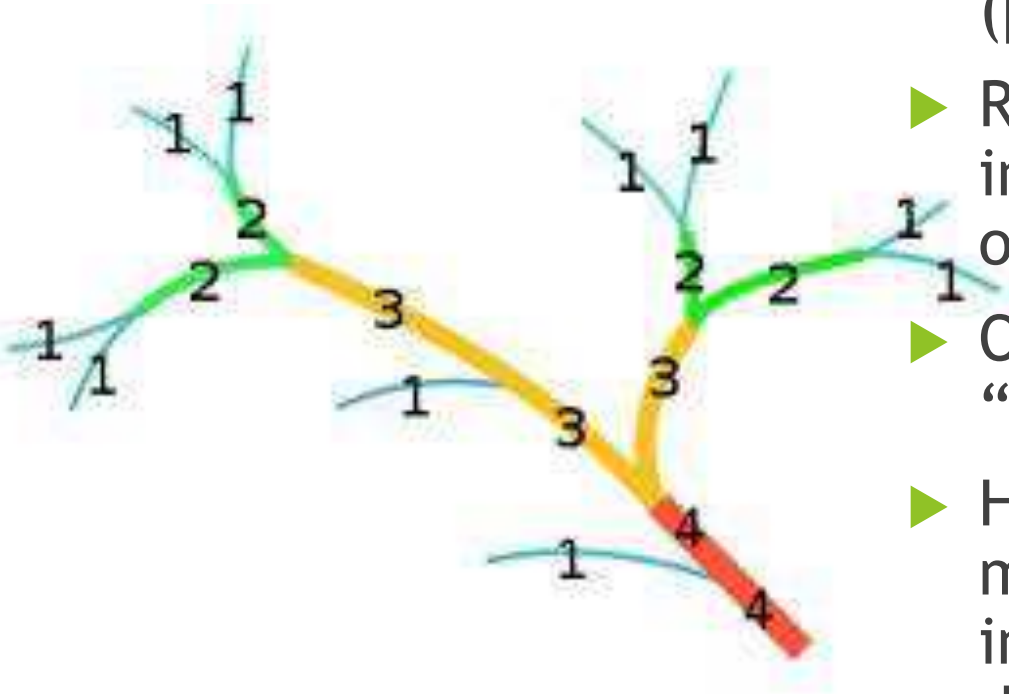
Map of Connecticut DEEP Waterbody Assessment Segments assessed for one or more designated uses



Source: 2016 State of Connecticut Integrated Water Quality Monitoring Report

Stream Order

- ▶ Flow year round (perennial stream)
- ▶ RBV method is best used in first and second order streams
- ▶ Often referred to as “headwater” streams
- ▶ Headwater streams are more vulnerable to impacts from development.



Graphic Source: Wikipedia

Aquatic Life Use Support Priority Streams 2014

Aquatic Life Use Support (ALUS) Priorities

List of streams and road crossings
are available at:

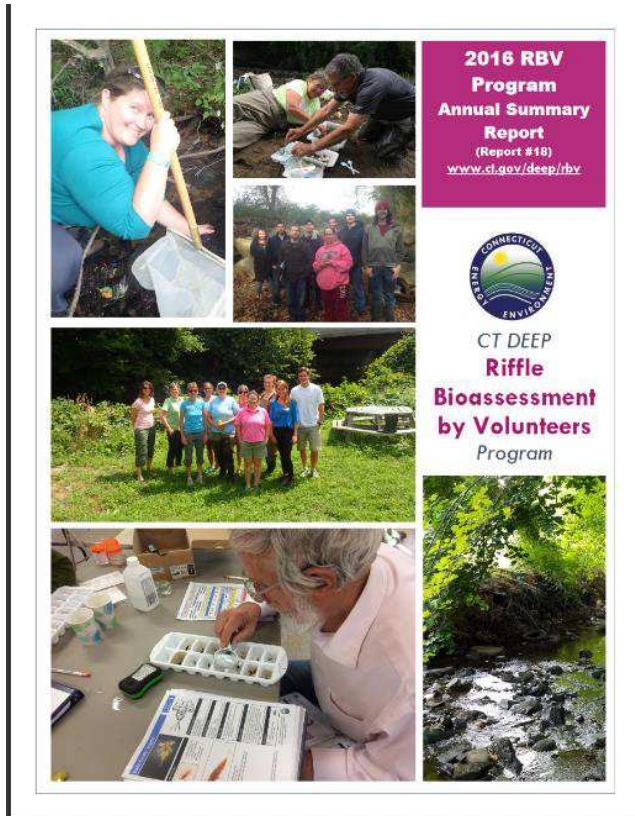
http://www.thamesriverbasinpartnership.org/TLGV_RBV.htm

2016 RBV Training Materials

The DEEP PowerPoint, updated
field cards, data sheets and other
relevant material are available for
download at:
<http://thelastgreenvalley.org/learn-protect/watershed-protection/water-quality-monitoring/>



Previously assessed streams



CT DEEP Riffle Bioassessment
by Volunteers Story Map

Major Sources of Disappointment

POOR VOUCHER

POOR COLLECTION



Not Getting a good Voucher

- Poor sorting due to too much material &/or muddied water**
- Rushed sorting due to nuisance insects, rain, snow, hunger, other commitments**
- Thinking someone else put one in already**
- Not using enough alcohol**
- Not labeling or using pen on your label**

Poor sampling location

09/21/2005

Poor sampling location



Poor sampling location



Poor sampling location



Poor sampling location



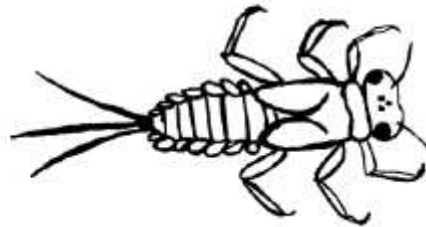
9. 9. 2005

Commonly misidentified bugs

Three-Tailed Flat Headed Mayfly

Moderately
Sensitive

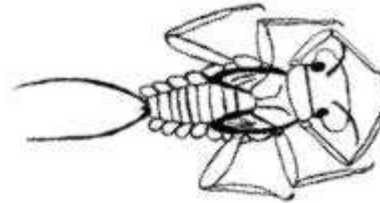
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Two-Tailed Flathead Mayfly

Most
Sensitive

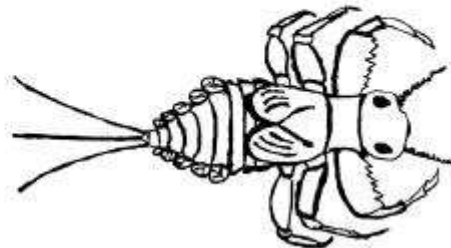
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Body-BUILDER Mayfly

Most
Sensitive

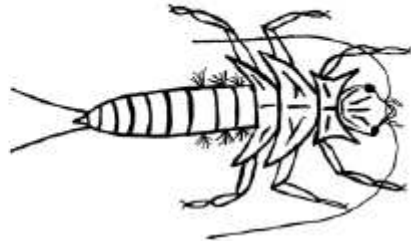
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Commonly misidentified bugs

Giant Stonefly

Most Sensitive **5B**



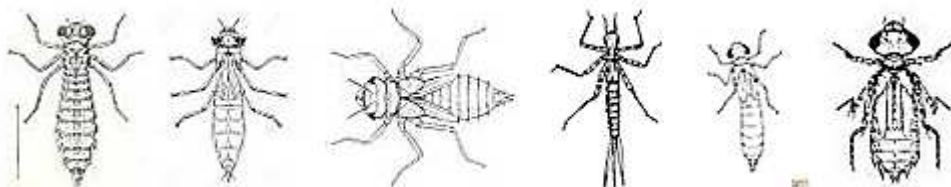
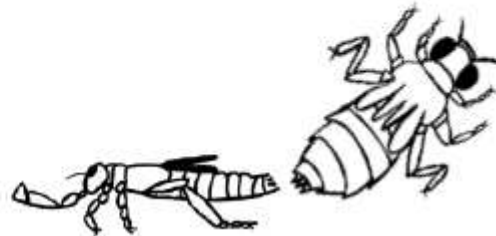
Dragonfly

Moderately Sensitive **14A**

General Identification

The following characteristics are universally true of the dragonfly families below:

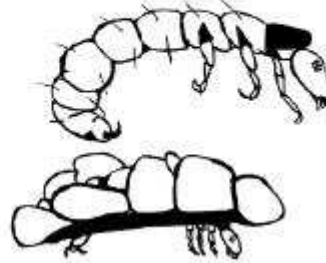
- Robust body
- Three short spike-like tails
- Two sets of wing pads
- Very large eyes
- Extendable lower jaw



Commonly misidentified bugs

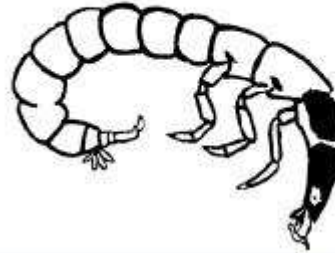
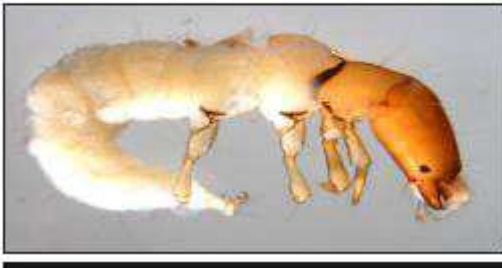
Saddlecase Maker Caddisfly

Most Sensitive **6A**



Fingernet Caddisfly

Moderately Sensitive **10**



Suggestion: If you find a saddlecase maker on a rock, pick it off and put it right into the voucher bottle.





Sometimes
the bugs
you are
looking for
are really
tiny.

Consider your comfort



5 gallon
buckets
make good
“sit-upons”
in the field

QUIZ TIME!













Let's Go Practice!



Connecticut Department of Energy and Environmental Protection