Thames River Basin Partnership Floating Workshop XI

June 24, 2011

Featuring the French River

Webster, MA

Photo courtesy of www.glsweetnam.com

TRBP FLOATING WORKSHOP XI

Thank you to our Sponsors!

Who are the Thames River Basin Partners?

Thames River Basin Partnership

The Thames River Basin Partnership is a voluntary, cooperative effort to share organizational resources and to develop a regional approach to natural resource protection. The partnership grew out of locally led workshops held by the region's Soil and Water Conservation Districts.

Our Mission

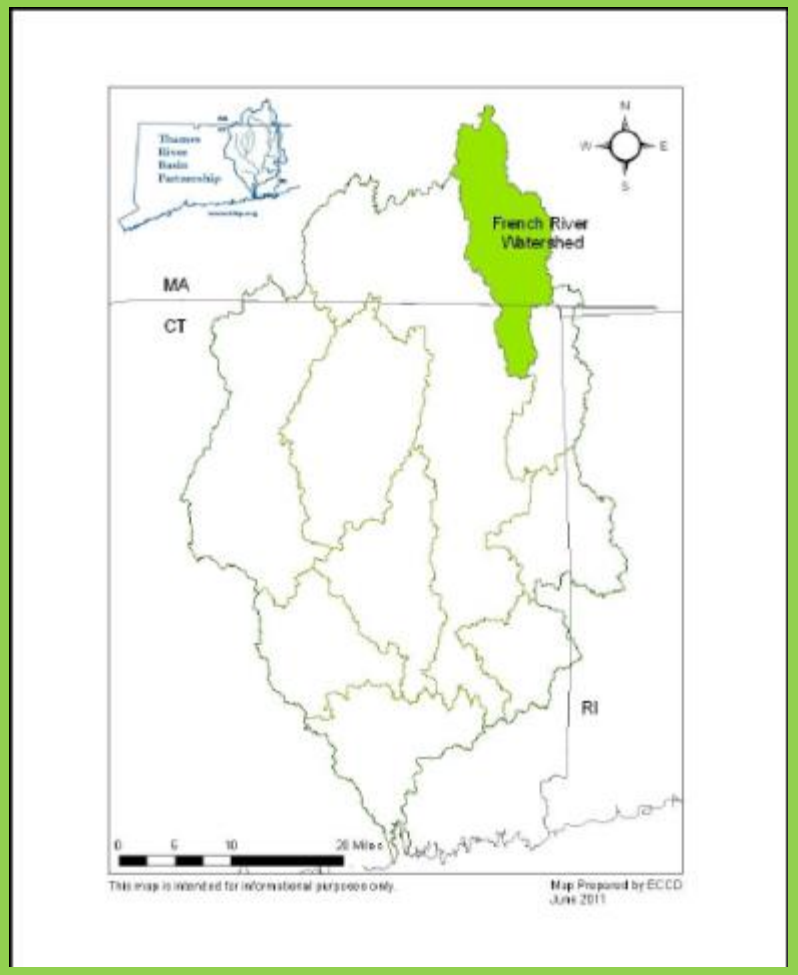
- Protect the region's agricultural and natural areas being threatened by land use changes.
- Protect ground and surface water quantity and quality being threatened and degraded by contamination.
- Protect the region's biodiversity.
- Improve the coastal zone resource conditions

Thames Watershed

- Thames River main stem flows from Norwich Harbor to Long Island Sound
- 9 regional river systems drain into the Thames River
- The French River begins in Massachusetts and flows into the Quinebaug River in Thompson, CT

The French River

- 26 miles long
- Leicester, MA – Thompson, CT
- Heavily hydro-modified
- Water quality concerns from both point and non-point sources



Ken Parker, President

The French River Connection

Lois Bruinooge, Deputy Executive Director

The Last Green Valley

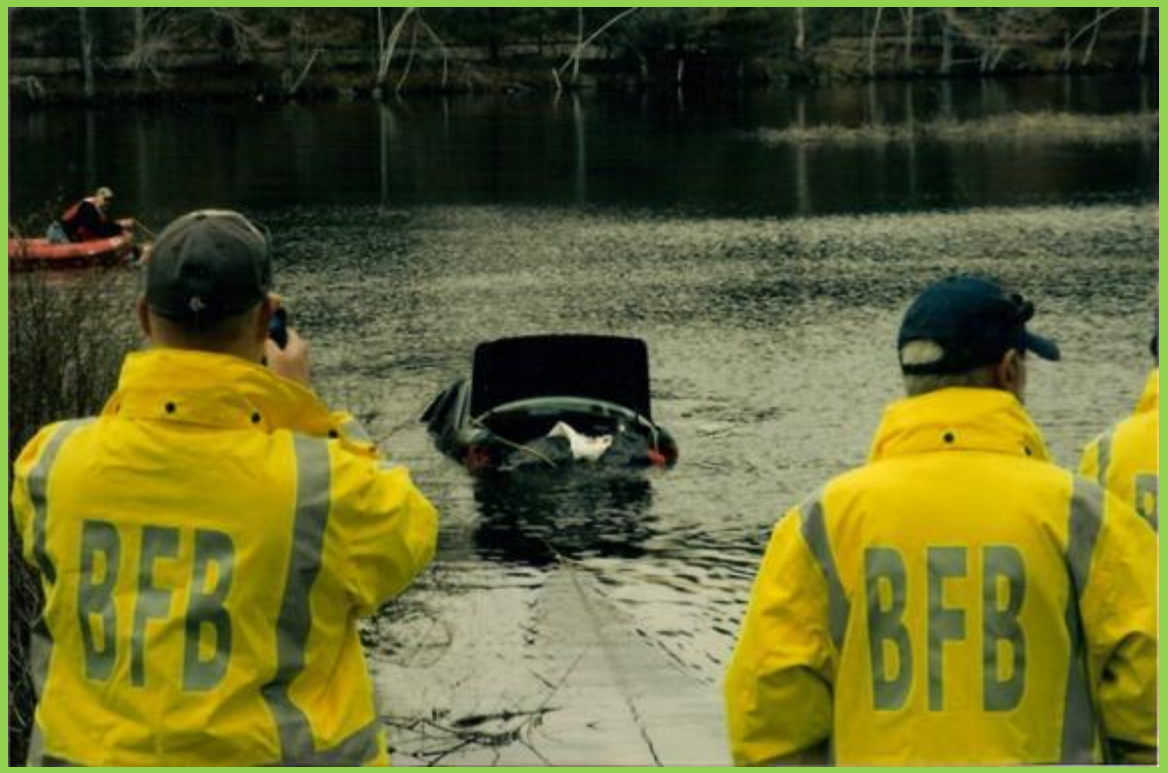
Water Trails

Thompson Together Environmental Committee

Norma O'Leary

French River – no parking zone

French River – no parking zone



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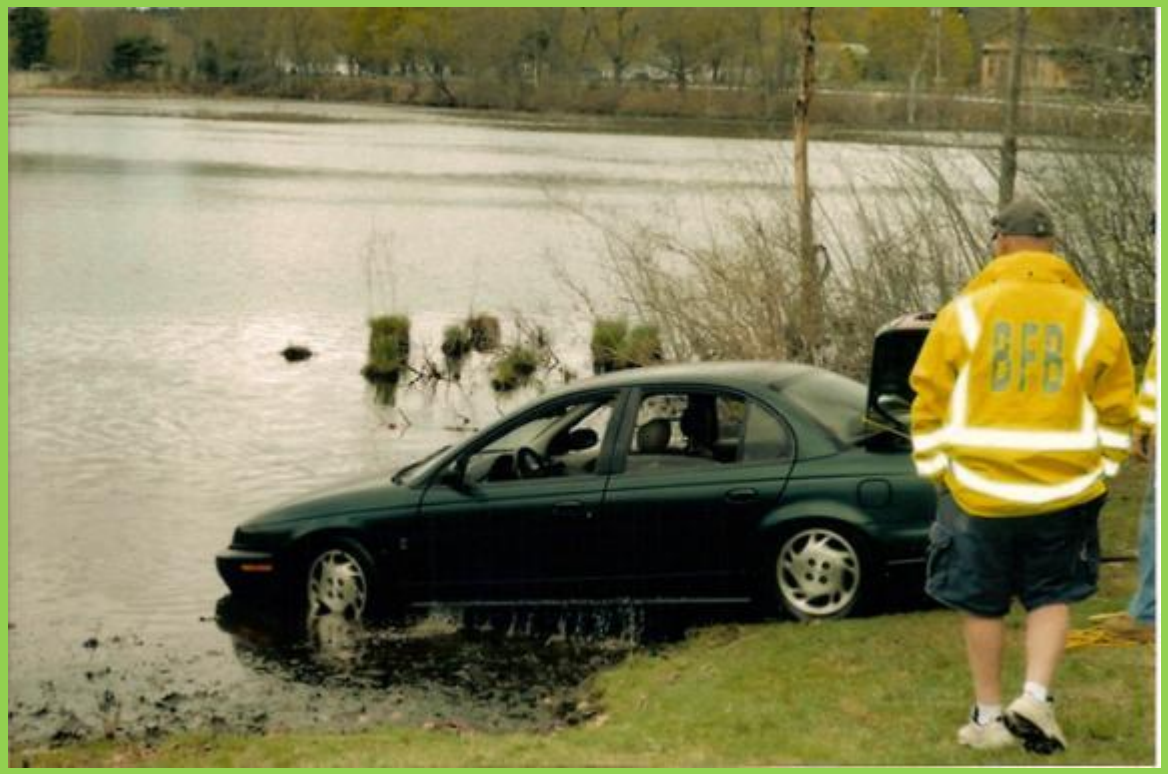

French River – no parking zone

Roland Zeleny

SayWatt Hydroelectric LLC

Mechanicsville Dam (Thompson, CT)

Mechanicsville Hydro
On the French River
In Thompson, CT


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Google
1991


GAP

Hydroelectric Power

- Provided 30-40% of US Electricity in 1930's
- Currently provides 7% of US Electricity
- By far the Largest Renewable Energy Source Today
- Most Efficient of the Renewable Sources (80%)
- Regulations and Technology have dramatically improved Hydro's environmental impacts.
- Improvements:
  - Automated Run-Of River Operation
  - Water Flow Prescriptions
  - Turbine Technology
  - Trash Rack Spacing
  - Fish Passage

Mechanicsville's Hydroelectric History

- Constructed in 1922 by Putnam Power & Light
- Diverted the Quinebaug River into the French
- Produced 750 kW Peak
- Shut down in 1936 due to a Major Flood
- Converted to a Bleaching Operation
- Abandoned in the 1950's?
- Rebuilt and Brought On-Line in 1988
- Adjacent to a large Textile Mill

Mechanicsville's Today

- Uses Only the French River
- Operates in Run-Of-River Mode
- Passed D.O. and Wetland Studies
- Produces 275 kW of Clean Energy
- Seeking Low Impact Hydro Institute Certification
  - Will be the 2nd Hydro Facility in CT to be LIHI Certified

Low Impact Hydro Institute Certification

The Low Impact Hydropower Institute (LIHI) is a non-profit organization dedicated to reducing the impacts of hydropower generation through the certification of hydropower projects that have avoided or reduced their environmental impacts pursuant to LIHI's criteria.

In order to be certified by the Institute, a hydropower facility must meet criteria in the following eight areas:

- River Flows
- Water Quality
- Fish Passage and Protection
- Watershed Protection
- Threatened and Endangered Species Protection
- Cultural Resource Protection
- Recreational Use
- Facilities Recommended for Removal

The Last Green Valley

Volunteer Water Quality Monitoring Program (WQM) is a partnership between The Last Green Valley, Inc and the Eastern Connecticut Conservation District

(and many other partners, too)

The inspiration for developing a volunteer water quality monitoring program…

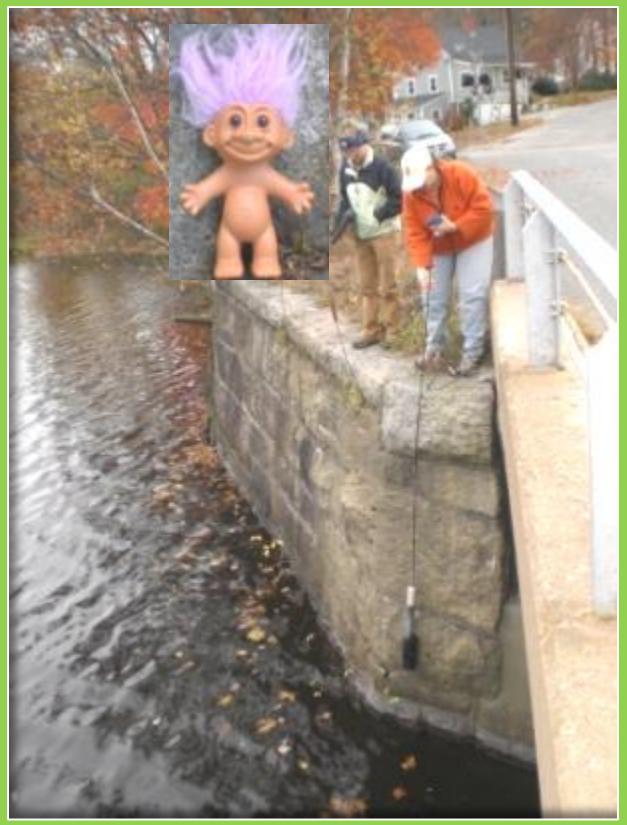
The Last Green Valley WQM

- 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 are involved in some capacity (and the teams are growing)

The Last Green Valley WQM

- Physical and Chemical Monitoring
- Nutrient Monitoring
- Visual Assessments
- Bioassessments
- Bacteria monitoring
- Secchi Disk monitoring (lakes)

Physical and Chemical Data Collection



In-Situ Troll 9500

- Temperature
- pH
- Dissolved Oxygen
- Conductivity
- Turbidity
- Oxidation/Reduction Potential (ORP)
- Depth (lakes)

Typical sampling is monthly from April to October

The Last Green Valley has 2 Trolls

- At first Webster Lake Association shared a rented Troll
- Unit 1 – funded by MA Executive Office of Energy and Environmental Affairs
- Unit 2 – funded by an anonymous donor

Troll Users Training 2011 Thompson, CT

Nutrient Monitoring

LaMotte2 Colorimeter

- Provided through the EPA Equipment Loan Program
- Used to measure nitrates and phosphates concentration in the water
- Excess nutrients lead to excess algae and plant growth
- Monthly sampling April – October
- Can be coordinated with other sampling programs
- Approximately 6 hrs/month
- Colorimeter sample analyzer training available.

Bacteria Monitoring

- Program initiated in 2010
- Water samples are analyzed for E. coli
- CT program only at this point
- Able to track sources of bacterial contamination
- Cooperation with the local municipality, the local health department, CT DEP, and CT DPH
- 8 weeks of sampling/ season minimal requirement

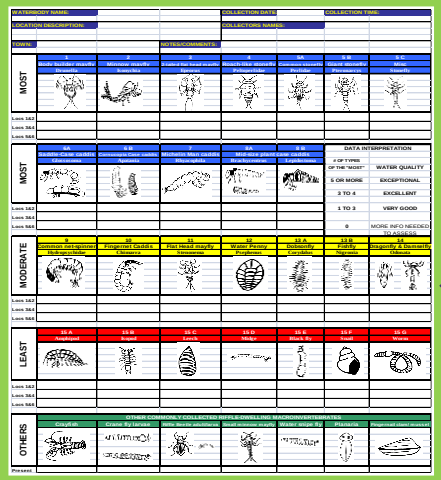
Bacteria CSI Team 2011

Rapid Bioassessment
Using insects as water quality indicators

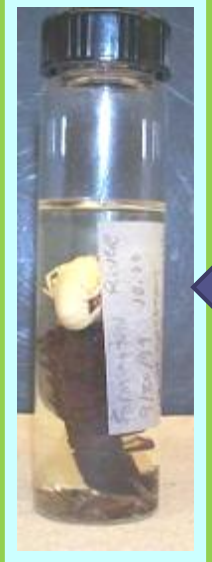
Collect

Sort

ID

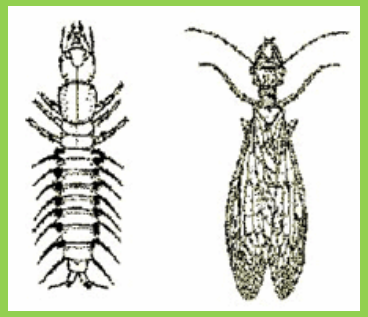


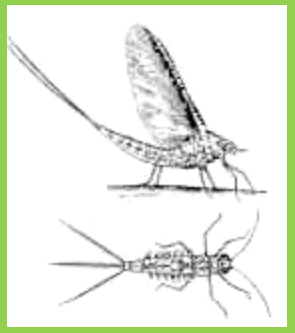
Voucher

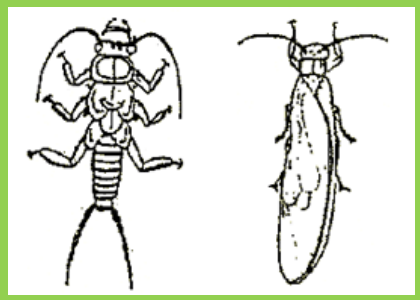


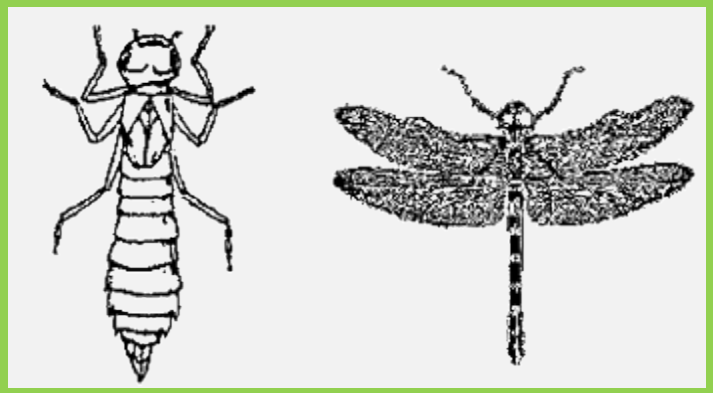
CT DEP

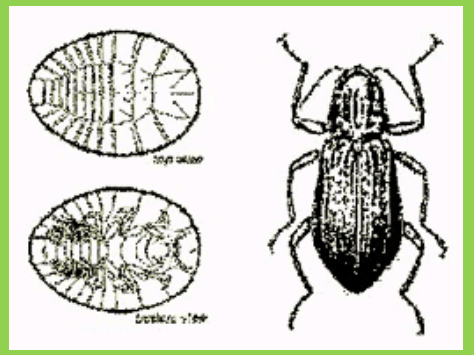
Training in August/September – sampling September - November

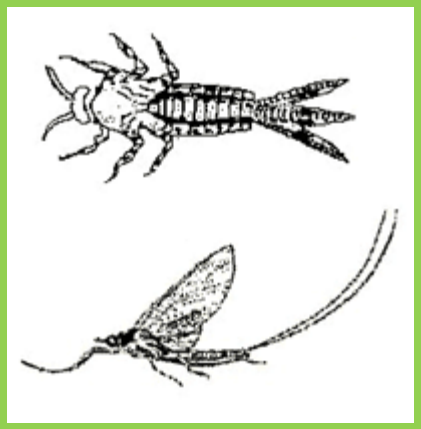


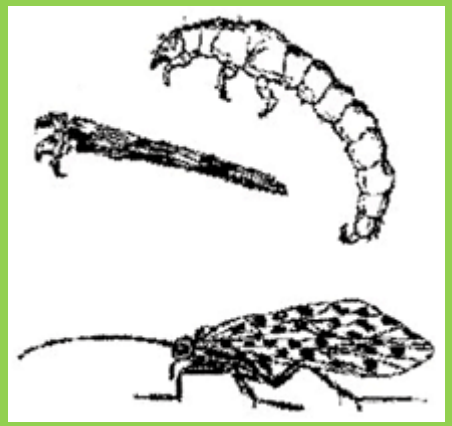


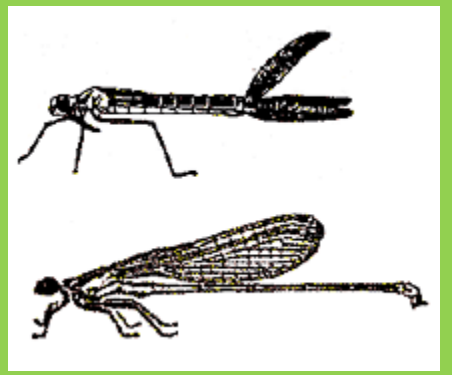












Killingly Vo-Ag School

Woodstock Academy

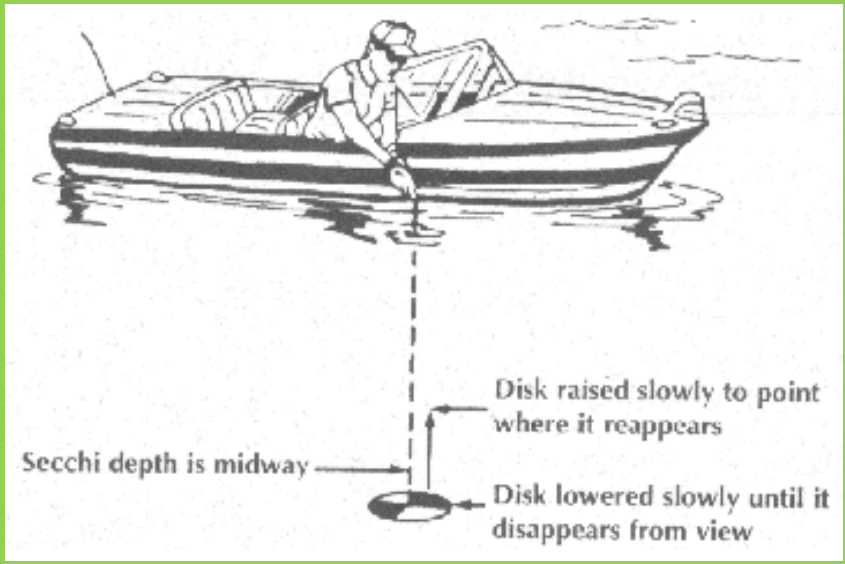
Stream Walk
Visual Assessment of Stream Conditions

- Erosion Assessment
- Fish barriers
- Storm water outfall
- Modified channel
- Impacted stream buffer
- Trash/debris
- Water conditions

Stream Walk Training Preston 2008

After Stream Walk training, you never see a storm drain quite the same way again.

Secchi Disk



- Used to measure how deep a person can see into the water
- Measure of water clarity
- Clarity is effected by algae, soil particles, and other materials suspended in the water
- 2011 Secchi Dip-in
  June 25 – July 17
- www.secchidipin.org

TLGV thanks all our volunteers







Are **you** willing to help fill these boots?

Volunteers needed to:

- Adopt a stream monitoring location for an annual Rapid Bioassessment
- Collect water samples for bacteria or nutrient monitoring
- Help record data at monitoring sites
- Analyze samples using a colorimeter
- Join an existing team or initiate a new In-situ monitoring program
- Data entry onto spreadsheets
- Free training – sign up for notifications

The Last Green Valley is grateful to all who provided funding and other support

- French River Connection
- Webster Lake Association
- CT DEP
- Connecticut Audubon Society Center at Pomfret
- Claire Birtz Trust
- South Charlton Reservoir Association
- CT Department of Environmental Protection/US EPA 319 program
- MA Executive Office of Energy and Environmental Affairs
- Greater Worcester Community Foundation
- Long Island Sound License Plate Program/National Fish and Wildlife Foundation
- US EPA Equipment Loan Program
- Frito-Lay
- Connecticut Light and Power

Next up

- Dick Cazeault of Webster Lake Association
- Board boats provided by WLA for our on-water field experience
  - WLA to demonstrate WQM using Troll and secchi disk
  - Judy Rondeau (ECCD and Town of Thompson) Thompson Riparian Buffer project
  - Mauri Pelto of Nichols College, Webster Lake hydrology
  - Jean Hixson of US Army Corp of Engineers, Flood control projects in the French River Watershed

For more information or to get involved, please contact

Jean Pillo, TLGV Water Quality Monitoring Volunteer Coordinator

860-928-4948 x 605

Jean.Pillo@ConserveCT.org