

# Exploring Stream Critters to Discover Water Quality



WWN VM Summit  
Rutgers EcoComplex  
November 18, 2009

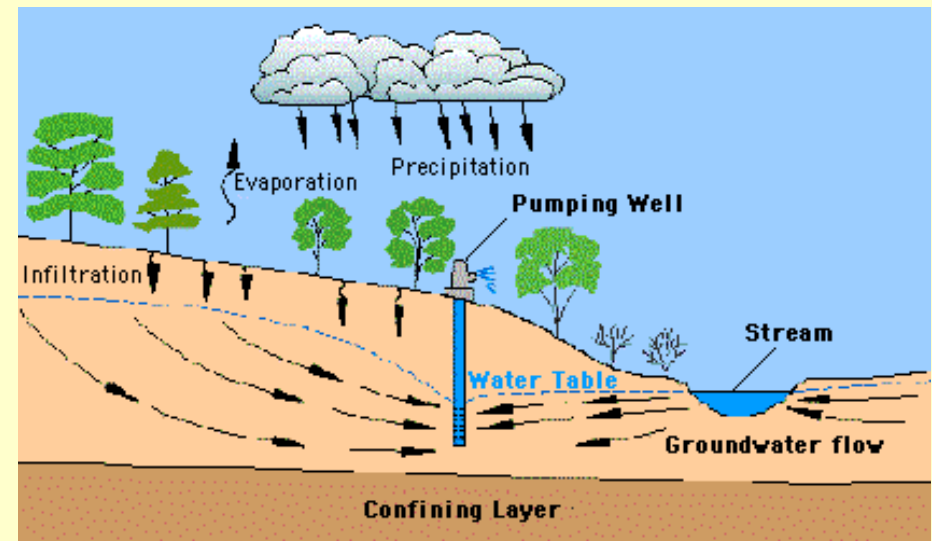
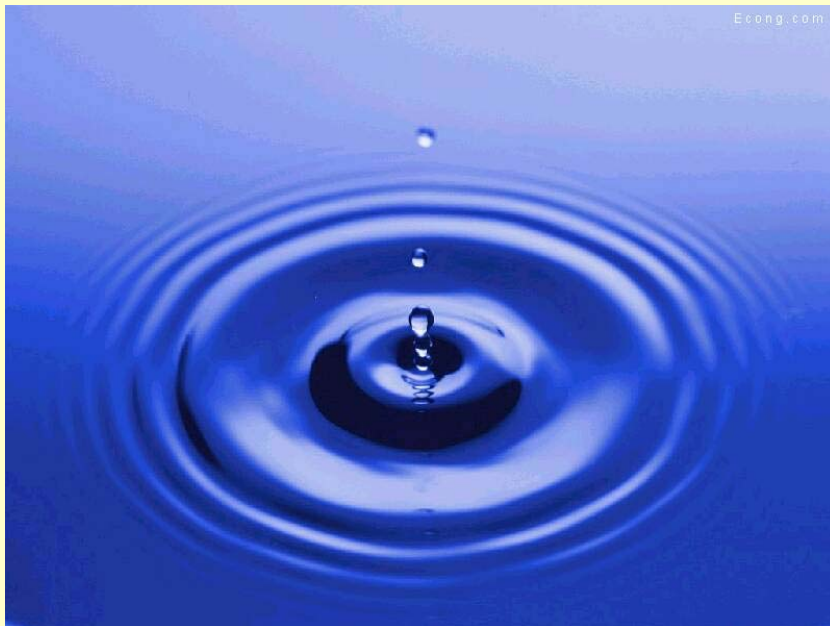
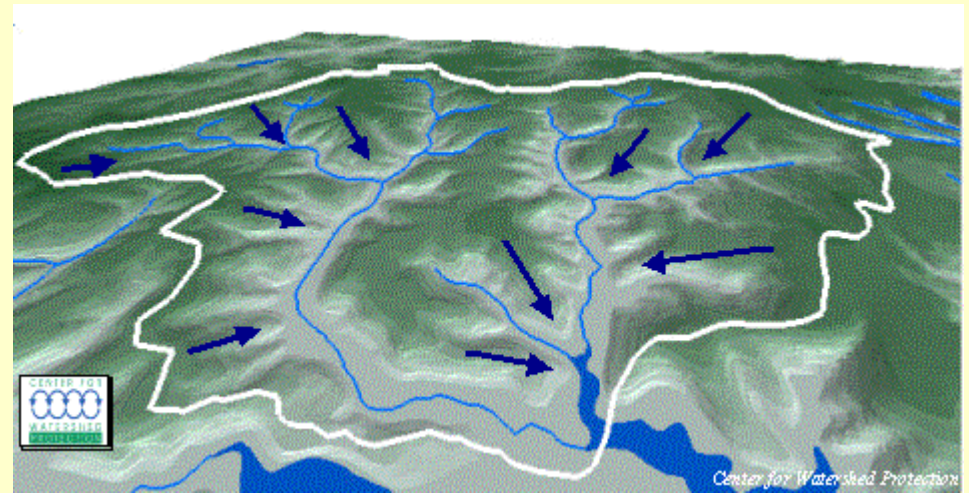


# About SBWA...

- Started in 1959
- Programs:
  - Environmental Education
  - Volunteer Biological Monitoring
  - Stream Clean Up
  - Well Testing
  - Green Table
  - Open Space
  - Restoration



**Watershed** – An area of land that drains into the same body of water.



(Adapted from USGS)

# Groundwater Model



# Benthic Macroinvertebrate

Benthic – lives on the bottom

Macro – large enough to be seen with the naked eye

Invertebrate – no backbone



# Macroinvertebrate Taxa Groups

Group 1 – Sensitive to pollution.



Group 2 – Somewhat sensitive to pollution.



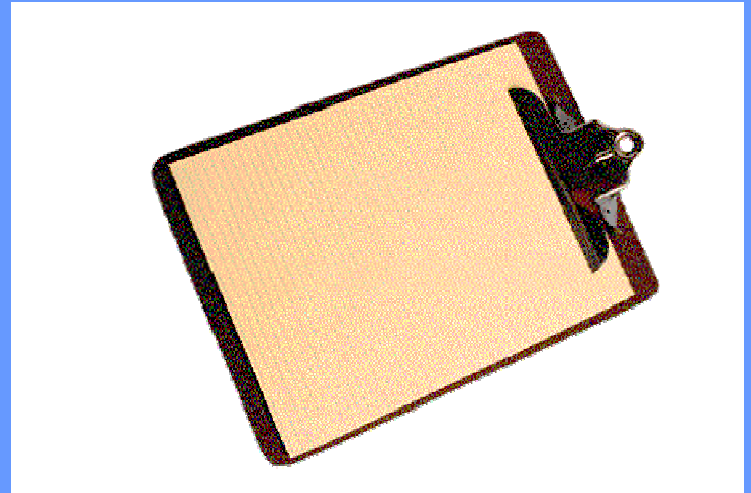
Group 3 – Tolerant of pollution.



# Biological Monitoring

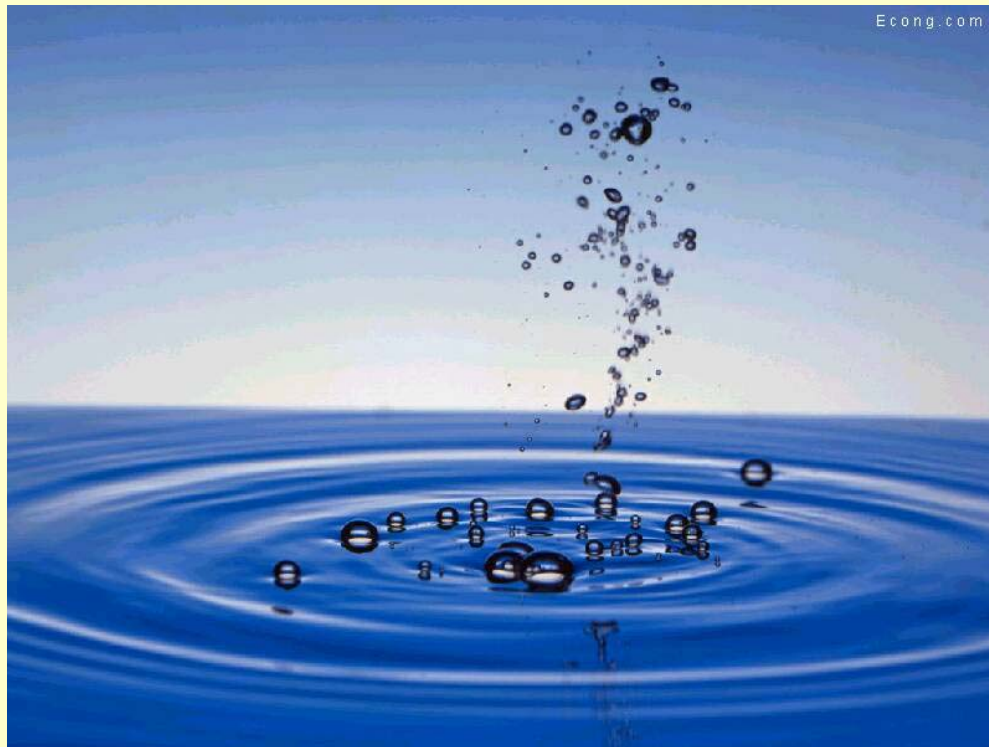
## - Macro Collecting Equipment

- large net
- small nets
- brushes and spoons
- spray bottle
- laminated macro ID keys
- collection pans
- sorting trays
- magnifying glasses
- macro checklist
- clipboards and pencils



# Before Day of Trip

- ✓ Remind to wear clothes and shoes that can get wet.
- ✓ Bring change of clothes.
- ✓ Permission slips.





# Day of Trip

## Safety Rules

- Stay with partner
- No running
- Stay in boundaries
- Do not pick up glass
- Slippery Rocks, etc



## Where to Find Macros

- Large net in riffles on bottom
- Small nets along edges and on bottom
- Bottoms of rocks

# Macro Collecting





# Mayfly Nymph



# **Caddisfly Larva**



**Stonefly**

**Nymph**

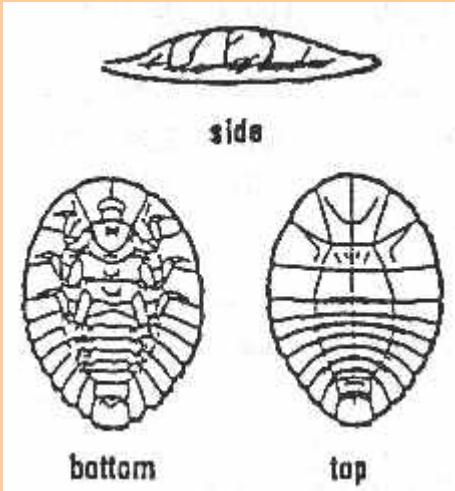




# **Dragonfly Nymph**



JASON NEUSWANGER  
TROUTNUT.COM



**Water**  
**Penny**

# Physical Monitoring – Site Survey



# Width

# Depth

# Velocity

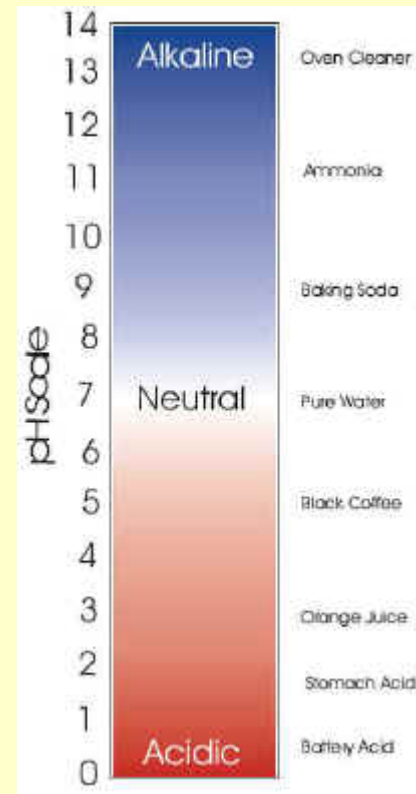
Need...

- thermometer
- yard stick
- rubber ducky
- tape measure
- stop watch



# Chemical Monitoring...

- Dissolved Oxygen
- pH
- Turbidity
- Nitrates
- Phosphates
- E Coli
- Hardness
- Alkalinity




# River Monitor

South Branch Water Association Map - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://map3.gismap.us/sbwa/>

Links Google MapQuest Yahoo! Local Weather Dictionary.com Official U.S.Time River Monitor Virtual River Experience

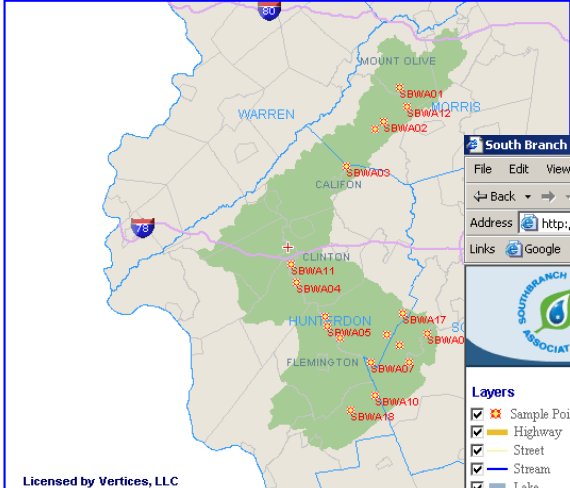


**Layers**

- Sample Points
- Highway
- Street
- Stream
- Lake
- South Branch Watershed
- Counties
- Municipalities

**Thematic Maps**

=== Land Use/Land Cover ===



**Index Map:**

South Branch Watershed Association  
The River Monitor

**Data Descriptions**

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South Branch Water Association Map - Microsoft Internet Explorer

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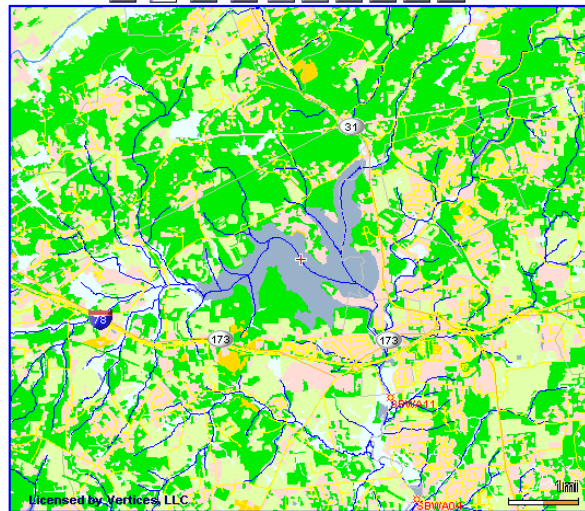
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**Thematic Maps**

-Land use/Land Cover 1995

- AGRICULTURE
- BARREN LAND
- FOREST
- URBAN
- WATER
- WETLANDS



**Index Map:**

**Search**

Select One

Search

**Data Descriptions**

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# NJ DEP E2 Data Management System

**Getting Started**

**Biological Monitoring**

**Chemical Monitoring**

**Visual Monitoring**

**Study Design**

**Estuary Monitoring**

**Quality Assurance**

**Resources**

**Lake Monitoring**

**Provided Assistance**

**Events / Trainings**

**Database**

## Database

### NEW JERSEY ELECTRONIC MANAGEMENT DATA SYSTEM

NJDEP, with help from the volunteer monitoring program coordinators from around the state has created the first NJ public data management system for volunteer collected data. This online data management system has been designed to help alleviate the burden of data management and allow volunteer collected data to be comparable with other available data. This powerful tool allows registered volunteers to run simple statistics, create graphs for visual comparisons and makes data for a particular watershed, water body, or geographic location available for download. This new system allows the data to be effectively managed, analyzed and reported for use by NJDEP, interested organizations, the general public and you!

To begin using the NJ Electronic Data Management System

1. To get started, register your volunteer monitoring program at [http://www.nj.gov/dep/wms/bfbm/vm/getting\\_started.html](http://www.nj.gov/dep/wms/bfbm/vm/getting_started.html). Fill out the New Group Signup Form found at the bottom of the page. New data reporters go to step 2.
2. You must have a free 'myNew Jersey' account to have access to the data system; point your browser to [www.nj.gov](http://www.nj.gov), click "Register" and follow the directions to create your account. Save your username and password.

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**Thank  
you!!**

