Lunch with Bugs

Order: Plecoptera, Stoneflies
Family: Perlidae, Common stoneflies
Macroinvertebrates

- Animals without backbones, large enough to be seen with the naked eye who live all or part of their lives in a waterbody. Can include:
  - gastropods (snails)
  - bivalves (clams + mussels)
  - Crustaceans (crayfish)
  - insects (both adult and larval forms)

Order: Odonata,
Dragonflies + Damselflies
Family: *Libellulidae*, Skimmers
a model for classifying and describing flowing water, in addition to the classification of individual sections of waters after the occurrence of indicator organisms
Trophic levels

The FISH... eat the INSECTS... on the LEAVES.... that come from TREES!
Biofilm

• Base of the food chain in an aquatic environment

• Algae, diatoms, fungus and bacteria begin the decomposition process
  – Conditions the detritus to be more nutritious and palatable to the next level of the food chain
Collectors
Predators
What is your favorite thing about your job?

If you love it, pursue it. Don’t be afraid to say yes to new experiences and don’t be afraid to change your path and explore!

Why Study Macroinvertebrates?

• Live in the stream all year
• Give a longer term picture of water conditions than chemistry
• Well established relationship between diversity and water quality

Order: Plecoptera, Stoneflies
Family: Perlidae, Common stoneflies
Macroinvertebrate Identification Key

GROUP 1 – Very Intolerant of Pollution

- Stonefly Nymph
- Mayfly Nymph
- Rifflle Beetle, Adult & Larva
- Caddisfly Larva

GROUP 2 – Moderately Intolerant of Pollution

- Dobsonfly Larva
- Water Penny Larva
- Right-Handed Snail

GROUP 3 – Fairly Tolerant of Pollution

- Damselfly Nymph
- Dragonfly Nymph
- Scud
- Clam/Mussel

GROUP 4 – Very Tolerant of Pollution

- Midge Larva
- Planaria
- Black Fly Larva

www.HoosierRiverwatch.com
Ephemeroptera, Mayflies

Plecoptera, Stoneflies

Trichoptera, Caddisflies

Highly sensitive indicator species
Ephemeroptera  Heptageniidae  Stenacron
“Flat-headed or Cookie-headed Mayflies”
Order: Ephemeroptera, Mayflies
Family: *Heptageniidae*, Flat Headed Mayflies
Macroinvertebrates.org

ORDER: Ephemeroptera
FAMILY: Ephemeridae
GENUS: Hexagenia

“Common Burrowing Mayflies”
Order: Ephemeroptera, Mayflies
Family: *Ephemeridae*, Common Burrowing Mayflies
Order: Ephemeroptera, Mayflies
Family: Isonychiidae, Brush Legged Mayflies
Plecoptera Perlidae *Agneta*na
“Common Stoneflies”
Order: Plecoptera, Stoneflies
Family: Perlidae, Common stoneflies
Trichoptera  Hydropsychidae  Hydropsyche
“Net-spinning Caddisflies, Common Netspinners, Seine-net Weavers”
Order: Trichoptera, Caddisflies

Family: *Hydropsychidae*, Net Spinning Caddisflies
"Canary in a Coal Mine"

- Sensitivity to water quality is well documented among different orders, allowing for a standard assessment between different streams within a watershed or region.
- Presence or absence of groups of insects can be used as early signs of changes in water quality.
Sample Collection Methods

- Surber Sampler
- D Frame Net
- Kick Net
Odonata, Dragonflies + Damselflies

Hagenius, Dragonhunter
STAY INVOLVED

• Thursday April 23 at noon: Monitor My Watershed
  • David Bressler of Stroud Water Research Center

• Thursday April 30 at noon: Salt Watch
  • Lauren McGrath of Willistown Conservation Trust
If you are interested in becoming a volunteer contact:

Sue Miller, Darby Creek Valley Association
Email: suedcva@gmail.com

Derron LaBrake
Email: 2ndvp@dcva.org

David Bressler
Email: dbressler@stroudcenter.org

Lauren McGrath
Email: LBM@wctrust.org
Questions?