Water Quality Testing

Materials

Water samples from various locations
Map of where samples were taken
Water test kits (SNAP kits work well!)
Water quality test equipment (secchi disk, plankton net, etc)
Dissecting scopes
Chart to record results
Common Macroinvertebrates handout

Procedures

1. Collect and observe water samples from various water sources. Note the locations where the samples came from on your map. (If you cannot actually collect the samples, observe samples provided and note locations.)

What characteristics of the surrounding area might be contributing to the quality of the water? Consider topography, land use and other factors.

2. Test water samples for temperature, phosphates, nitrates, turbidity and dissolved oxygen. Chart data for each site.

3. Macroinvertebrates are a good indication of water quality. Use a dissecting scope to search for macroinvertebrates and in the space below, sketch any you find.

4. Complete a lab report to describe the various reasons for your findings.

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Site 1 Data

Description of the water source: river, creek, drainage ditch, pond, etc

Temperature ºC	Phosphate (ppb)	Nitrate (ppm)	Turbidity	Dissolved Oxygen (ppm)

Site 2 Data

Description of the water source: river, creek, drainage ditch, pond, etc

Temperature ºC	Phosphate (ppb)	Nitrate (ppm)	Turbidity	Dissolved Oxygen (ppm)

Site 3 Data

Description of the water source: river, creek, drainage ditch, pond, etc

Temperature ºC	Phosphate (ppb)	Nitrate (ppm)	Turbidity	Dissolved Oxygen (ppm)

Site 4 Data

Description of the water source: river, creek, drainage ditch, pond, etc

Temperature ºC	Phosphate (ppb)	Nitrate (ppm)	Turbidity	Dissolved Oxygen (ppm)

Site 5 Data

Description of the water source: river, creek, drainage ditch, pond, etc

Temperature ºC	Phosphate (ppb)	Nitrate (ppm)	Turbidity	Dissolved Oxygen (ppm)

Graph the data for each on a piece of graph paper or using a spreadsheet program.

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Collect all of the data in the following chart.

Item Tested	Why should we check for this?	Sources	Human Impacts
*TEMPERATURE Site 1: _____ Site 2: _____ Site 3: _____ Site 4: _____ Site 5: _____			
PHOSPHATE Site 1: _____ Site 2: _____ Site 3: _____ Site 4: _____ Site 5: _____			
NITRATES Site 1: _____ Site 2: _____ Site 3: _____ Site 4: _____ Site 5: _____			
TURBIDITY Site 1: _____ Site 2: _____ Site 3: _____ Site 4: _____ Site 5: _____			
DISSOLVED OXYGEN Site 1: _____ Site 2: _____ Site 3: _____ Site 4: _____ Site 5: _____			

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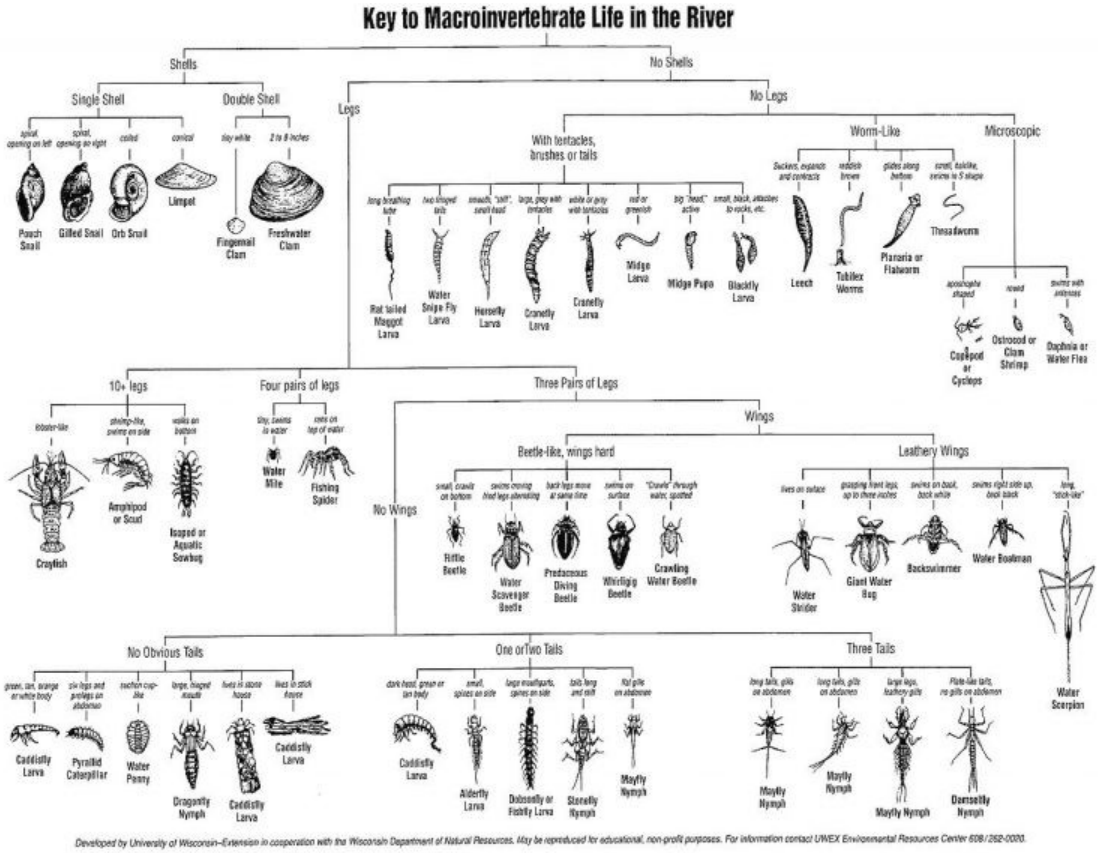
Download the ***Aqua bugs*** app to help to identify the macroinvertebrates or use the chart below to help you identify any macroinvertebrates you find in your water samples.



Extensions

- Rank macroinvertebrates from best to worst according to indicator of quality chart or assign research to specific organisms.
- If travel is possible, conduct collection of water samples with class and consider topography, air temperature, weather, stream flow, etc and how it would affect your quality tests.