



Macroinvertebrate Data Sheet

Instructions

Read the following information about macroinvertebrates. Check each box if the macroinvertebrate is present in the stream, and in the space provided, write the number of that species found. Identify the index value for each of the three species categories (sensitive, somewhat sensitive, and tolerant) using the calculations provided. To determine the total index value of the stream, add together the three species category index values.

Macroinvertebrates are animals that have no backbone and are visible without magnification. **Aquatic benthic macroinvertebrates** are those that live on the bottoms of streams, rivers, or other water bodies. They include such animals as crayfish, mussels, aquatic snails, aquatic worms, and the larvae of aquatic insects.

Macroinvertebrates are used as water quality indicators because:

1. They are sensitive to changes in the stream ecosystem.
2. Their sensitivity varies by species, so the kinds of macroinvertebrates present provide insight into water quality.
3. Many live in an aquatic ecosystem for more than a year and cannot easily escape negative ecosystem changes, enabling water quality tracking over time.
4. They can be collected very easily from most streams.

Sensitive Species	Somewhat Sensitive Species	Tolerant Species
<input type="checkbox"/> ___ Caddisfly larvae <input type="checkbox"/> ___ Hellgrammite <input type="checkbox"/> ___ Mayfly larvae <input type="checkbox"/> ___ Gilled snails <input type="checkbox"/> ___ Riffle beetle adult <input type="checkbox"/> ___ Stonefly larvae <input type="checkbox"/> ___ Water penny larvae	<input type="checkbox"/> ___ Beetle larvae <input type="checkbox"/> ___ Clams <input type="checkbox"/> ___ Crane fly larvae <input type="checkbox"/> ___ Crayfish <input type="checkbox"/> ___ Damselfly larvae <input type="checkbox"/> ___ Dragonfly larvae <input type="checkbox"/> ___ Scuds <input type="checkbox"/> ___ Sowbugs <input type="checkbox"/> ___ Fishfly larvae <input type="checkbox"/> ___ Alderfly <input type="checkbox"/> ___ Watersnipe larvae	<input type="checkbox"/> ___ Aquatic worms <input type="checkbox"/> ___ Black fly larvae <input type="checkbox"/> ___ Leeches <input type="checkbox"/> ___ Midge larvae <input type="checkbox"/> ___ Lung snails
Boxes checked x 3 = ___ index value	Boxes checked x 2 = ___ index value	Boxes checked x 1 = ___ index value
Water Quality Rating <input type="checkbox"/> Excellent (>22) <input type="checkbox"/> Fair (11-16) Total Index Value = _____ <input type="checkbox"/> Good (17-22) <input type="checkbox"/> Poor (<11)		

Source: Cleveland, April J. "Water What-ifs: Water Quality and Aquatic Invertebrates." Science Junction, NC State University, 1998. <http://www.ncsu.edu/sciencejunction/depot/experiments/water/lessons/macrol/>.