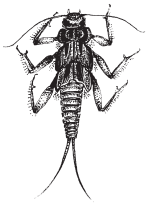
Group 1: These are sensitive to pollutants. Circle each animal found.



Stonefly Larva

Dobsonfly Larva

Alderfly Larva

Water Snipe Fly Larva

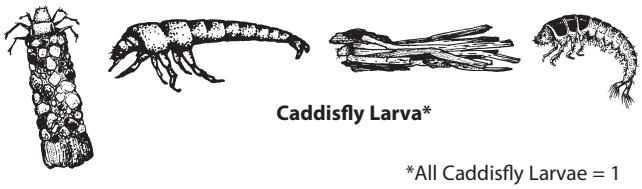
No. of group 1 animals circled: ☐

Relative Size Key:

(+) = larger than picture

(-) = smaller than picture

Group 2: These are semi-sensitive to pollutants. Circle each animal found.

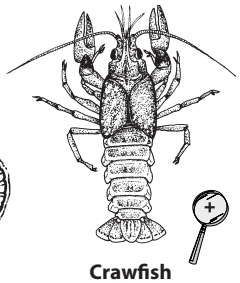


Caddisfly Larva*

*All Caddisfly Larvae = 1

Dragonfly Larva

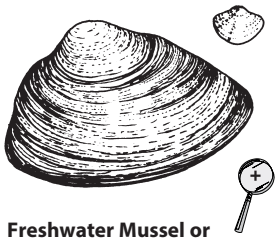
Water Penny



Crawfish

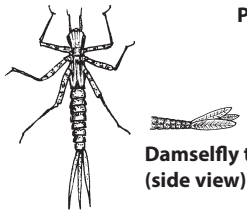
No. of group 2 animals circled: ☐

Crane Fly Larva



Freshwater Mussel or Fingernail clam

Mayfly Larva



Damselfly tail (side view)

Damselfly Larva

Riffle Beetle Larva*

Riffle Beetle Adult*

*All Riffle Beetles = 1

Group 3: These are semi-tolerant of pollutants. Circle each animal found.

Black Fly Larva

Non-Red Midge Larva

Snails: Orb or Gilled (right side opening)

*All Snails = 1

Amphipod or Scud

No. of group 3 animals circled: ☐

Group 4: These are tolerant of pollutants. Circle each animal found.

Pouch Snail (left side opening)

Isopod or Aquatic Sowbug

Bloodworm Midge Larva (red)

Leech

Tubifex Worm

No. of group 4 animals circled: ☐

For more information, call (608) 265-3887 or (608) 264-8948.

Download and print data sheets from
watermonitoring.uwex.edu/wav/monitoring/sheets.html

Water Action Volunteers

Name(s): _____

Calculating a Biotic Index

A **biotic index** is a number used to understand water health. The math used in the calculation is based on how tolerant different animals are to pollution.

When you make your calculation, the total number of animals you found is not important. The biotic index is based on the **types** of macroinvertebrates you found.

1. On the back of this page, circle the types of animals that you found (refer to your data sheet).
2. Count the number of animal types in each group and write the number in the box. *Remember: don't count each individual animal, just how many types you found*.
3. Enter the number from each box into the equations below and multiply to find the group value.
4. Add up the number of animals circled for all groups to find the Total animals (A).
5. Add up all the group values to find the Total group value (B).

	Number of animals		Group value
Number of animals circled in group 1	_____	x 4 =	_____
Number of animals circled in group 2	_____	x 3 =	_____
Number of animals circled in group 3	_____	x 2 =	_____
Number of animals circled in group 4	_____	x 1 =	_____
	_____		_____
	Total animals (A)		**Total group value (B)**

6. Now divide the total group value by the total animals to find your biotic index score.

Total Group Value (B) _____ ÷ Total Animals (A) _____ = ☐

Index Score

How healthy is your water?

An index score between: 2.6 – 3.5 is **Good**
2.1 – 2.5 is **Fair**
1.0 – 2.0 is **Poor**

Modified by the UNH Leitzel Center GLOBE Partnership from Water Action Volunteers Program at the University of Wisconsin-Madison Division of Extension.