

Calculate the River's Water Quality Based on Macroinvertebrates

1. Identify the macroinvertebrates you collected. Use the picture guide in this document.
2. In the chart below, put a check next to the name of all the macroinvertebrates you found.
3. Add up the number of checks in each column. This is the number of **TAXA** (different kinds of) macroinvertebrates that belong to that group.
4. Multiply the number of taxa by the group's weighting factor. This gives you the **GROUP SCORE**.
5. Add up all the group scores. This will give you the **TOTAL GROUP SCORE**.
6. Add up the number of taxa from all the columns. This is the **TOTAL NUMBER OF TAXA**.
7. Divide the total group score (from step 5) by the total number of taxa (from step 6). This will give you the **WATER QUALITY INDEX** for your river.
8. Using the table at the bottom right of the page, find how the river's water quality index ranks.

	GROUP 1 Intolerant to pollution	GROUP 2 Moderately intolerant to pollution	GROUP 3 Fairly tolerant to pollution	GROUP 4 Very tolerant to pollution
Macro-invertebrates (check all the ones you found)	Alderfly _____	Caddisfly _____	Black Fly _____	Aquatic worm _____
	Dobsonfly _____	Clam/Mussel _____	Midge _____	Blood worm _____
	Snipe Fly _____	Cranefly _____	Right-handed or other snails _____	midge _____
	Stonefly _____	Crayfish _____	Scud _____	Leech _____
		Damselfly _____	Sowbug _____	Left-handed snail _____
		Dragonfly _____		
		Mayfly _____		
		Riffle Beetle _____		
		Water Penny _____		
# of TAXA (add up checks)				
WEIGHTING FACTOR	x 1	x 2	x 3	x 4
GROUP SCORE (TAXA x weighting factor)	=	=	=	=

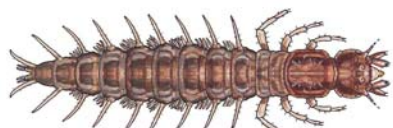
TOTAL GROUP SCORE (add up the group scores from all the columns)	
TOTAL NUMBER OF TAXA (add up the number of taxa from all columns)	
WATER QUALITY INDEX (total group score ÷ total number of taxa)	

Water Quality (circle one)	
Excellent	1.0 – 2.0
Good	2.1 – 2.5
Fair	2.6 – 3.5
Poor	greater than 3.6

Group 1 – These organisms are generally considered to be intolerant to pollution



Alderfly Larva



Dobsonfly Larva

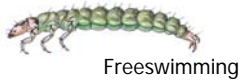


Snipe Fly Larva



Stonefly Larva

Group 2 – These organisms are generally considered to be moderately intolerant to pollution



Freeswimming
Caddisfly Larvae



Fingernail Asiatic



Mussels



Zebra Mussel



Water Penny



Case
Maker



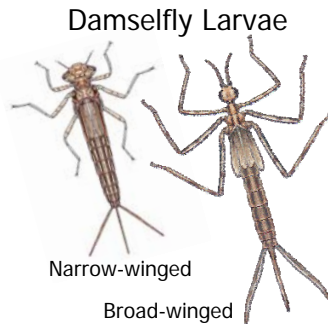
Riffle Beetle



Larva



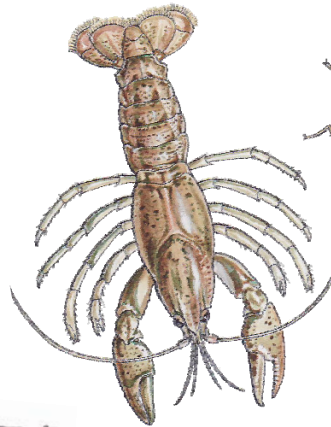
Adult



Damselfly Larvae

Narrow-winged

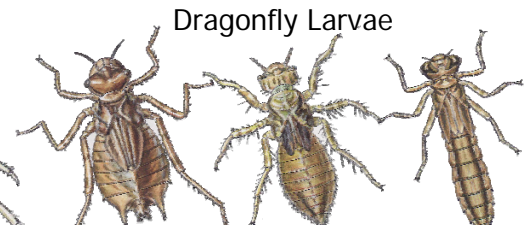
Broad-winged



Crayfish



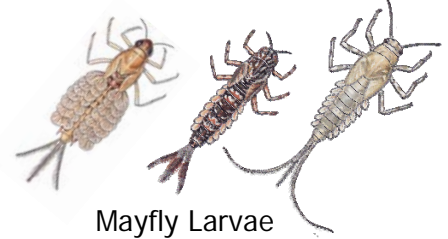
Crane fly Larva



Dragonfly Larvae

Skimmers

Darner



Mayfly Larvae

Group 3 – These organisms are generally considered to be fairly tolerant to pollution



Black Fly Larva



Midge Larva



Right-Handed
(Gilled)



Orb



Scud



Sowbug

Group 4 – These organisms are generally considered to be very tolerant to pollution



Aquatic Worm



Bloodworm
Midge Larva



Leech



Left-Handed Snail

Other Aquatic Organisms



Crawling
Water Beetle



Giant Water Bug



Backswimmer



Whirligig
Beetle



Waterboatman



Water
Strider



Planaria



Water Scavenger
Beetle



Water Scorpion



Predacious
Diving Beetle