



BENTHIC MACROINVERTEBRATES

AS WATER QUALITY INDICATORS



TAXA GROUP 1: THESE ORGANISMS ARE POLLUTION-INTOLERANT.
 Their dominance generally signifies excellent water quality.



Stonefly Nymph
 (Order Plecoptera,
 Family Capniidae)



Mayfly Nymph
 (Order Ephemeroptera,
 Family Baetidae)



Caddisfly Larva*
 (Order Trichoptera)



Dobsonfly Larva
 (Order Megaloptera,
 Family Corydalidae)



Water Penny Larva*
 (Order Coleoptera,
 Family Psephenidae)



Riffle Beetle
 (Order Coleoptera,
 Family Elmidae)



Gilled Snail
 (Order Gastropoda)

TAXA GROUP 2: THESE ORGANISMS ARE MODERATELY POLLUTION-INTOLERANT.
 Their dominance usually signifies good water quality.



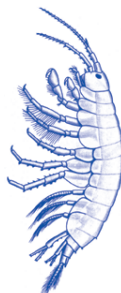
Damselfly Nymph*
 (Order Odonata)



Dragonfly Nymph*
 (Order Odonata)



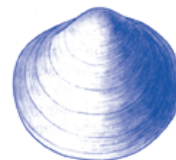
Aquatic Sowbugs*
 (Order Asellus)



Scud
 (Order Amphipoda)

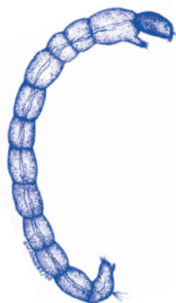


Crane fly
 (Order Diptera,
 Family Tipulidae)



Freshwater Clam
 (Class Pelecypoda)

TAXA GROUP 3: THESE ORGANISMS ARE GENERALLY MODERATELY TOLERANT OF POLLUTION.
 Their dominance usually signifies poor water quality.



Midge Larva*
 (Order Diptera,
 Family Chironomidae)



Black fly Larva*
 (Order Diptera)



Flatworm
 (Order Turbellaria,
 Family Planariidae)



Leeches
 (Class Hirudinea)

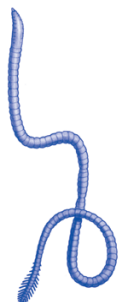


Water mite
 (Class Hydracarina)

TAXA GROUP 4: THESE ORGANISMS ARE VERY TOLERANT OF POLLUTION.
 Their dominance usually signifies bad water quality.



Pouch or Lung Snail
 (Class Gastropoda)



Sewage Worm
 (Order Oligochaeta,
 Family Tubificidae)



Blood Midge
 (Order Diptera,
 Family Chironomidae)



Rat-tailed Maggot
 (Family Syrphidae)

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For more information on biological monitoring, check out Chapter 6: Benthic Macroinvertebrates in the *Field Manual for Water Quality Monitoring: An Environmental Education Program for Schools*, by Mark Mitchell and William Stapp, available from Earth Force.