



Core units: Exemplar – Year 10

Illustration 2: Environmental change

Water quality testing

Carry out a series of scoops to determine a water quality rating as you complete the activities below.

1. Using the identification charts provided, count the number of various types of macroinvertebrates found in your scoops. Record the numbers in the tally table on the next page.
2. If a macroinvertebrate is present, circle its sensitivity index number.
3. At the end of the session, add up all of the circled numbers to determine the pollution index.
4. Use the water quality rating table on the next page to work out your water quality rating based on the pollution index.
5. Study the information from your tally table. Most of the organisms were from which category?
 - Sensitive
 - Tolerant
 - Very tolerant



Source: Image © Tamara Boyer

Tally table: Macroinvertebrates data collection

Invertebrate	Number found (tally)	Sensitivity index
Sensitive		
Stonefly larvae		8
Mayfly larvae		7
Caddis fly larvae		6
Dragonfly larvae		6
Damsel fly larvae		6
Water mites		5
Tolerant		
Gilgie/marron		4
Freshwater mussels		4
Beetle larvae		4
Beetles		3
Bugs		3
Water fleas		3
Freshwater shrimp		3
Amphipods (shrimp species)		3
Snails		3
Flatworms		3
Leeches		3
Very tolerant		
Water boatman		2
Back Swimmer		2
Fly larvae		2
Midge larvae		1
Aquatic earthworms		1
POLLUTION INDEX	(Total circled index numbers)	
Water Quality Rating		

Water quality rating table

Pollution index	Water quality rating
19 or less	Poor
20–34	Fair
35–49	Good
50 or more	Excellent