

# Vegetation and Habitat Health - Macro-invertebrates

## ACTIVITY

### Benthic Macro-Invertebrates

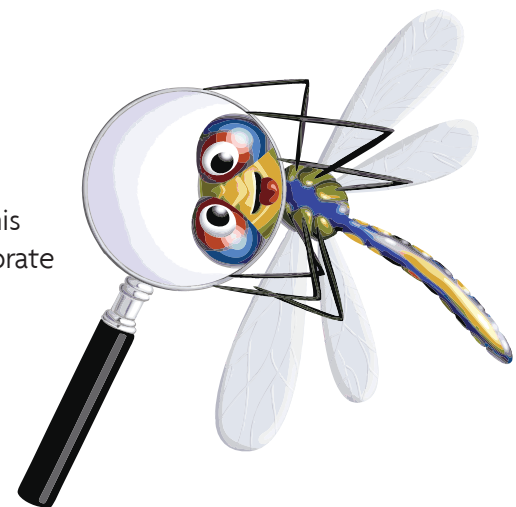
You will find most of the materials you need for this activity in the Water Quality Monitoring Test Kits available for hire from Ipswich Water.

- Step 1 -** Select a shallow, fast moving area in your waterway and place a flat-bottomed net on the bed of the stream so that no organisms can escape.
- Step 2 -** Disturb the bed 1 metre upstream so that the dislodged organisms are carried into the net.
- Step 3 -** Use a forward scooping motion to lift the net from the water and empty the net into a light coloured tray.
- Step 4 -** Randomly select an organism using the tweezers or paddle pop stick and place into the first depression of the ice cube container. Place a tick in the 'ORGANISM 1' box on the Benthic Macro-Invertebrate Diversity Sheet. Use the Water Bug Detective Guide and Stream Quality Slide to identify the organism.
- Step 5 -** Repeat Step 4. If you select the same organism as before, place another tick in the 'ORGANISM 1' box, and return the organism to the waterway. If it is a different organism to that in Step 4, place it in the second depression of the ice cube container and place a tick in the 'ORGANISM 2' box. Continue this process until all organisms have been identified and counted (at least 50 organisms should be collected to give a good representation of diversity).
- Step 6 -** Count the number of different organisms.
- Step 7 -** Count the total number of organisms collected (ie. the number of ticks).
- Step 8 -** Calculate diversity by dividing the number of different organisms (Step 6) by the total number of organisms. Record this number on the Habitat Assessment Sheet under Macro-invertebrate Diversity.

$$\text{DIVERSITY} = \frac{\text{Number of different types of organisms}}{\text{Total number of organisms}}$$

### Things you will need:

- disposable gloves
- ice cube containers
- tweezers
- water bug detective guide
- net
- paddle pop sticks or small paint brush
- flat bottom net



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## BENTHIC MACRO-INVERTEBRATE DIVERSITY SHEET

**ORGANISM 1**

TOTAL

Name of Organism:

**ORGANISM 2**

TOTAL

Name of Organism:

**ORGANISM 3**

TOTAL

Name of Organism:

**ORGANISM 4**

TOTAL

Name of Organism:

**ORGANISM 5**

TOTAL

Name of Organism:

**ORGANISM 6**

TOTAL

Name of Organism:

**ORGANISM 7**

TOTAL

Name of Organism:

**ORGANISM 8**

TOTAL

Name of Organism:

**ORGANISM 9**

TOTAL

Name of Organism:

**ORGANISM 10**

TOTAL

Name of Organism:

**ORGANISM 11**

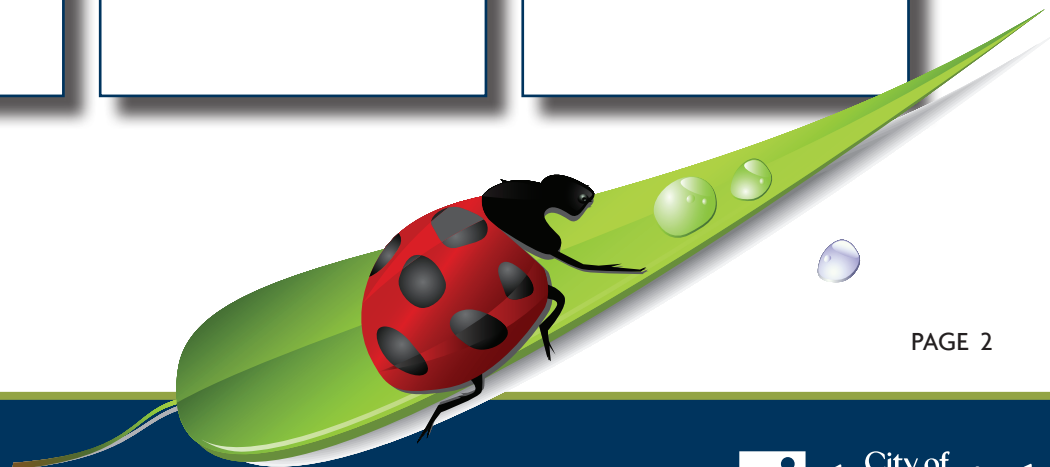
TOTAL

Name of Organism:

**ORGANISM 12**

TOTAL

Name of Organism:



# Vegetation and Habitat Health - **Macro-invertebrates**

## MACRO-INVERTEBRATE TOLERANCE SHEET

Tick which organism(s) were identified:

CATEGORY	SENSITIVITY	
<b>4</b> Excellent	<b>VERY SENSITIVE ORGANISMS</b>	
	<input type="checkbox"/> Stonefly nymphs <input type="checkbox"/> Mayfly nymphs <input type="checkbox"/> Freshwater shrimps	
<b>3</b> Average	<b>SENSITIVE ORGANISMS</b>	
	<input type="checkbox"/> Dobonflies (Alderflies) <input type="checkbox"/> Mussels <input type="checkbox"/> Freshwater prawns <input type="checkbox"/> Freshwater crayfish	<input type="checkbox"/> Dragonfly nymphs <input type="checkbox"/> Damselfly nymphs <input type="checkbox"/> Caddis fly nymphs <input type="checkbox"/> Water mites
<b>2</b> Fair	<b>TOLERANT ORGANISMS</b>	
	<input type="checkbox"/> Beetles (Coleoptera) <input type="checkbox"/> True bugs (Hemiptera) <input type="checkbox"/> Freshwater snail	<input type="checkbox"/> Dragonfly nymphs <input type="checkbox"/> Leech
<b>1</b> Poor	<b>VERY TOLERANT ORGANISMS</b>	
	<input type="checkbox"/> Black fly larvae <input type="checkbox"/> Mosquito larvae <input type="checkbox"/> Non-biting midges	<input type="checkbox"/> Freshwater worm <input type="checkbox"/> Fly larvae



Record your rating on the **HABITAT ASSESSMENT SHEET** under **'Macro-invertebrate Rating'**