

**Macroinvertebrate Assessment****Data Sheet**

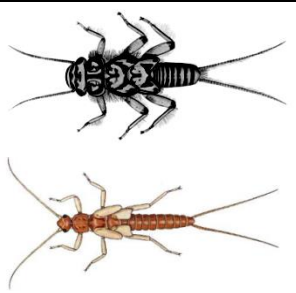
(Page 1 of 8)


(To be completed before and during assessment)

<b>Part I: Color Dots</b> ( <u>Before</u> assessment)	<b>Part II: Water Quality Score</b> ( <u>During</u> assessment)
<p>1. Read <b>Color Code &amp; Sensitivity Points</b> below to understand the water quality conditions represented by the colors <u>green</u>, <u>yellow</u>, and <u>red</u>. Place the correct color in the <b>Color</b> box beside the points.</p> <p>2. For each <b>Type of Macroinvertebrate</b> listed below, look at its <b>Sensitivity Points</b> and place the correct color (<u>green</u>, <u>yellow</u>, or <u>red</u>) in the <b>Color</b> column.</p> <p>3. Look at each picture in the <b>Picture</b> column and review the <b>Color</b> and <b>Sensitivity Points</b> assigned to it.</p>	<p>1. Collect macroinvertebrates at your river site. For each <b>Type</b> in your collection, write its sensitivity points in the blank box in the <b>Sensitivity Points</b> column.</p> <p>2. Use the <b>Water Quality Score Formula</b> provided below to compute a <b>Water Quality Score</b>.</p> <p>3. Compare your <b>Water Quality Score</b> to the <b>Water Quality Levels table</b> to understand the conditions at your site.</p>

<b>Color Code &amp; Sensitivity Points</b>					
Can live in <b>good</b> water quality conditions		Can live in <b>good or fair</b> water quality conditions.		Can live in <b>good, fair, or poor</b> water quality conditions.	
	<b>Color</b>		<b>Color</b>		<b>Color</b>
<b>10 to 8 points</b>	<b>Green</b>	<b>7 to 4 points</b>	<b>Yellow</b>	<b>3 to 1 points</b>	<b>Red</b>

<b>Scientific Name of Group</b>	<b>Type of Macroinvertebrate (Common Name)</b>	<b>Picture</b>	<b>Color</b>	<b>Sensitivity Points</b>
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<b>Plecoptera</b> (Stoneflies)	Stonefly larvae			<b>10</b>
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<b>Trichoptera</b> (Caddisflies)	Caddisfly larvae without cases (except net-spinner caddisfly larvae)			<b>9</b>
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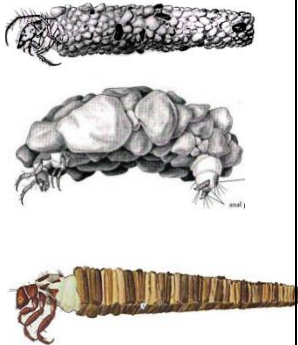
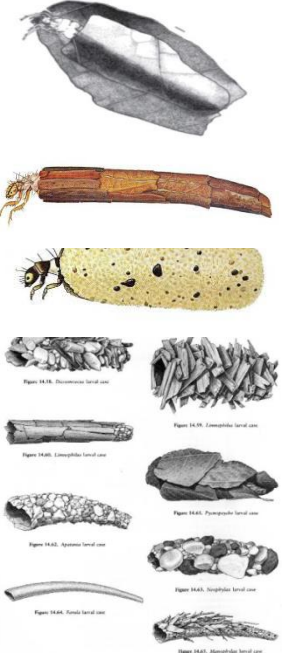

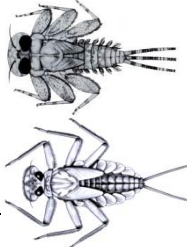


# Macroinvertebrate Assessment

# Data Sheet

(Page 2 of 8)

(To be completed before and during assessment)

<b>Trichoptera</b> (Caddisflies)	Caddisfly larvae with sand/gravel cases		10
	Caddisfly larvae with leaf, stick, debris cases		7
	Net-spinner caddisfly larvae		5
<b>Ephemeroptera</b> (Mayflies)	Flattened mayfly larvae		9



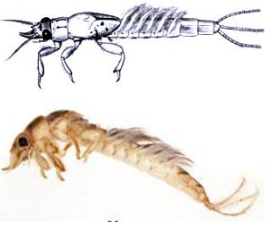
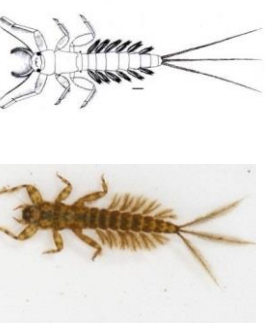
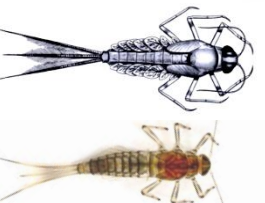


# Macroinvertebrate Assessment

# Data Sheet

(Page 3 of 8)

(To be completed *before* and *during* assessment)

<b>Ephemeroptera</b> (Mayflies)	Prong-gilled mayfly larvae			8
	Spiny crawling mayfly larvae			10
	Burrowing mayfly larvae			5
	Hackle-gilled mayfly larvae			5
	Swimming mayfly larvae			5



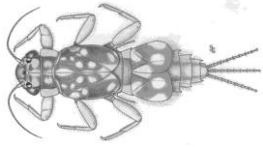

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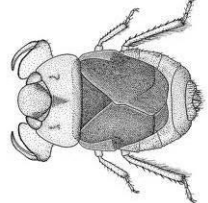

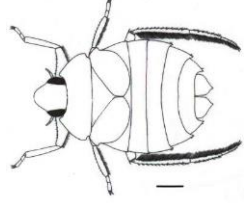





# Data Sheet

(Page 4 of 8)



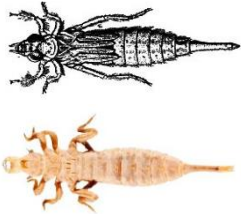



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<p><b>Ephemeroptera</b> (Mayflies)</p>	<p>Square-gilled mayfly larvae</p>	 		<p>4</p>	
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<p><b>Hemiptera</b> (True Bugs)</p>	<p>Long-mouthed saucer bugs</p>	   		<p>9</p>	
	<p>All other water bugs</p>	   		<p>5</p>	







<b>Megaloptera</b> (Dobsonflies & Alderflies)	Dobsonfly larvae			8	
	Alderfly larvae			6	
<b>Odonata</b> (Dragonflies & Damselflies)	One-tailed dragonfly larvae			8	
	All other dragonfly larvae			5	
	Damselfly larvae			5	
<b>Coleoptera</b> (Beetles)	Whirligig beetle adults and larvae (Gyrinidae)			6	



	Water penny larvae (Psephenidae)			7	
	All other water beetles and larvae			5	
<b>Lepidoptera</b> (Moths and Butterflies)	Moth larvae			5	
<b>Diptera</b> (True flies)	Black fly larvae			6	
	Mosquito larvae			3	
	Crane fly larvae			5	
	Phantom midge			3	
	Rat-tailed maggots			2	

Macroinvertebrate Assessment			Data Sheet	
(Page 7 of 8)		(To be completed <i>before</i> and <i>during</i> assessment)		
	Non-biting midge larvae			2
<b>Decapoda</b> (Prawns, Shrimp, & Crabs)	River prawns			8
	Freshwater shrimps			4
	River crabs			7
	Field crabs			3
<b>Isopoda</b> (Isopods)	Water hoglouse			3
<b>Pelecypoda</b> (Mussels & Clams)	Swan mussels (Pseudodontinae)			6
	Pea cockles			3



<b>Gastropoda</b> (Snails & Limpets)	Freshwater limpets			5	
	Pagoda snails			6	
	All other snails			3	
<b>Turbellaria</b>	Flatworms			3	







# Macroinvertebrate Assessment

(Page 8 of 8)

# Data Sheet

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<b>Hirudinea</b>	Leeches		<b>3</b>
<b>Oligochaeta</b>	Segmented worms		<b>1</b>

Water Quality Score Formula		
1. Add up all of the <i>Sensitivity Points</i> that you assigned during collection.	<b>Sum of Points</b>	= <input style="width: 50px; height: 30px;" type="text"/>
2. Add up all of the <i>Types of Macro-invertebrates</i> you found during collection.	<b>Number of Types</b>	= <input style="width: 50px; height: 30px;" type="text"/>
3. Divide Sum of Points by Number of Types.	<b>Water Quality Score</b>	= $\frac{\text{Sum of Points}}{\text{Number of Types}}$ = <input style="width: 50px; height: 30px;" type="text"/>

Water Quality Levels		
✓	Place a check mark next to the level that contains your Water Quality Score.	
10.0 – 7.0	<b>Good</b>	
6.9 – 3.0	<b>Fair</b>	
2.9 – 1.0	<b>Poor</b>	
0	<b>No life at all</b>	