Water Bug Survey Results Sheet

Group name: ..... **Number in group:** ……

Survey site: ..... **Date/Time sampled:** .....

Site Habitat (tick all that apply):

Habitat	Edge	Pool	Riffle
Silt & sand			
Stones			
Water plants			
Leaves & twigs			
Logs, branches & tree roots			

Sampling Method: **Kick** **Sweep** **Kick + Sweep**

To manually calculate score:

Step 1: Enter the number of specimens (how many) of each bug found in column 1
Step 2: Refer to the weight table for the correct weight factor for the number found
Step 3: Enter the correct weight factor for each bug in column 2
Step 4: Multiply the weight factor (column 2) by the bug grade (column 3) and enter the answer in column 4
Step 5: Add up column 2 (weight factors)
Step 6: Add up column 4 (bug value x weight factor)
Step 7: Divide total column 4 by total column 2 to calculate your SIGNAL score
Step 8: Add up the total number of bug types you found (NOT specimens)
Step 9: Use the interpretation chart to get an indication of the likely condition of your sampling area

Weight table

Number of specimens of bug type (column 1)		Weight factor (column 2)
1 – 2	→	1
3 – 5	→	2
6 – 10	→	3
11 – 20	→	4
> 20	→	5

SIGNAL score = <u>total column 4</u> = ____ =
total column 2

Bug types found that are not on list:

Total No. of bug types found =

Interpretation chart

SIGNAL score	0 - 7	More than 7
Above 5.5	**Suggests toxic pollution or poor habitat**	**Suggests good habitat and water quality**
Below 5.5	**Suggests pollution**	**Suggests high salinity or nutrient levels (may be natural)**

Number of bug types

Helpful Hints:

- The area sampled should be at least $10m^2$. A minimum of 200 bugs should be sampled.
- Some organisms are rare in the Upper Murrumbidgee (eg. Those with an asterisk).
- True bugs vs. Water beetles: True bugs are widest at the eyes, and have a 'cross' (overlapping wings) on their backs. Water beetles have narrow heads, and no cross on their backs.
- When entering the data on the ALA database, use the Latin name only.

NOTES:

Record numbers and species of fish, frogs and waterbirds seen/heard. Describe the habitat that you have sampled, and its condition.

WATER BUG TYPE	Column 1 Number of specimens	Column 2 Weight factor	Column 3 Bug grade	Column 4 Weight factor x Bug grade
Very Sensitive to most pollutants				
Scorpionflies *Mecoptera*			10	
Stoneflies *Plecoptera*			10	
Mayflies *Ephemeroptera*			9	
Alderflies; dobsonflies *Megaloptera*			8	
Caddisflies *Trichoptera*			8	
Sensitive to most pollutants				
Horsehair worms; gordian worms *Nematomorpha*			6	
Mites *Acarina*			6	
*Cave shrimp *Anaspidacea*			6	
Lacewings *Neuroptera*			6	
Moderately tolerant of most pollutants				
Beetles (eg. Riffle beetles, Whirligigs) adults & larva *Coleoptera*			5	
*Freshwater sponges *Porifera*			4	
*Pipe-mosses *Bryozoa*			4	
Yabbies; crayfish, shrimp *Decapoda*			4	
Aquatic millipedes *Diplopoda*			4	
Proboscis worms *Nemertea*			3	
Nematodes, roundworms *Nematoda*			3	
*Freshwater mussels; clams *Bivalvia*			3	
Side-swimmers; scuds *Amphipoda*			3	
Fly larva (eg. Mosquito larvae, bloodworms) *Diptera*			3	
Dragonflies; damselflies *Odonata*			3	
Very tolerant of most pollutants				
Flatworms *Turbellaria*			2	
Segmented worms *Oligochaeta*			2	
Freshwater slaters *Isopoda*			2	
True bugs (Eg. Back swimmers, water boatman, needle bugs etc.) *Hemiptera*			2	
*Moth larvae *Lepidoptera*			2	
*Hydras; freshwater jellyfish *Hydrozoa*			1	
Freshwater snails *Gastropoda*			1	
Leeches *Hirudinea*			1	
Bristleworms *Polychaeta*			1	
*Brine shrimps; fairy shrimps *Anostraca*			1	
*Fish lice *Branchiura*			1	
*Clam shrimp *Conchostraca*			1	
*Tadpole shrimp, shield shrimp *Notostraca*			1	
Springtails *Collembola*			1	
	TOTALS			