

Water Bug Survey Results Sheet

Group name: Number in group:
 Survey site: Date/Time sampled:

Site Description: Riffle Edge Pool

- Step 1: Enter the number of specimens of each bug type 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

Interpretation Chart

SIGNAL score = $\frac{\text{total column 4}}{\text{total column 2}}$ = _____ =

Above 5.5
 SIGNAL2 score

Total No. of bug types found =

Below 5.5

Suggests toxic pollution or poor habitat	Suggests good habitat and water quality
Suggests pollution	Suggests high salinity or nutrient levels (may be natural)

0 - 7 More than 7
 Number of bug types

Helpful Hints:

- The area sampled should be at least 10m² . A minimum of 100 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 additional details regarding the waterbugs. 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				
Scorpion flies <i>Mecoptera</i>			10	
Stoneflies <i>Plecoptera</i>			10	
Mayflies <i>Ephemeroptera</i>			9	
Alder flies; dobson flies <i>Megaloptera</i>			8	
Caddis flies <i>Trichoptera</i>			8	
Sensitive to most pollutants				
Horsehair worms; gordian worms <i>Nematomorpha</i>			6	
Mites <i>Acarina</i>			6	
*Cave shrimp <i>Anaspidacea</i>			6	
Lacewings <i>Neuroptera</i>			6	
Moderately tolerant of most pollutants				
Beetles (eg. Riffle beetles, Whirligigs) <i>Coleoptera</i>			5	
*Freshwater sponges <i>Porifera</i>			4	
*Pipe-mosses <i>Bryozoa</i>			4	
Yabbies; crayfish, shrimp <i>Decapoda</i>			4	
Aquatic millipedes <i>Diplopoda</i>			4	
Proboscis worms <i>Nemertea</i>			3	
Nematodes, roundworms <i>Nematoda</i>			3	
*Freshwater mussels; clams <i>Bivalvia</i>			3	
*Side-swimmers; scuds <i>Amphipoda</i>			3	
Fly larva (eg. Mosquito larvae, bloodworms) <i>Diptera</i>			3	
Dragonflies; damselflies <i>Odonata</i>			3	
Very tolerant of most pollutants				
Flatworms <i>Turbellaria</i>			2	
Segmented worms <i>Oligochaeta</i>			2	
Freshwater slaters <i>Isopoda</i>			2	
True bugs (Eg. Back swimmers, water boatman, needle bugs etc.) <i>Hemiptera</i>			2	
*Moth larvae <i>Lepidoptera</i>			2	
*Hydras; freshwater jellyfish <i>Hydrozoa</i>			1	
Freshwater snails <i>Gastropoda</i>			1	
Leeches <i>Hirudinea</i>			1	
Bristleworms <i>Polychaeta</i>			1	
*Brine shrimps; fairy shrimps <i>Anostraca</i>			1	
*Fish lice <i>Branchiura</i>			1	
*Clam shrimp <i>Conchostraca</i>			1	
*Tadpole shrimp, shield shrimp <i>Notostraca</i>			1	
Springtails <i>Collembola</i>			1	
TOTALS				